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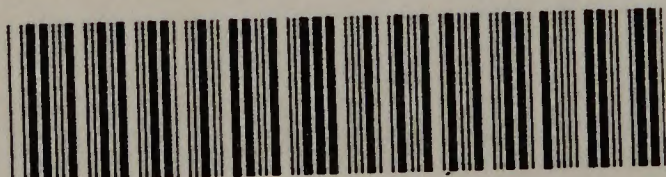
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THE DUBLIN
QUARTERLY JOURNAL
OF
MEDICAL SCIENCE;

CONSISTING OF

ORIGINAL COMMUNICATIONS,
REVIEWS, RETROSPECTS, AND REPORTS,

RELATIVE TO

LATEST DISCOVERIES IN MEDICINE, SURGERY, AND THE COLLATERAL SCIENCES.

VOL. VI.

AUGUST AND NOVEMBER, 1848.

DUBLIN:
HOUGHTON AND SMITH, CRAFTON STREET.

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1848.

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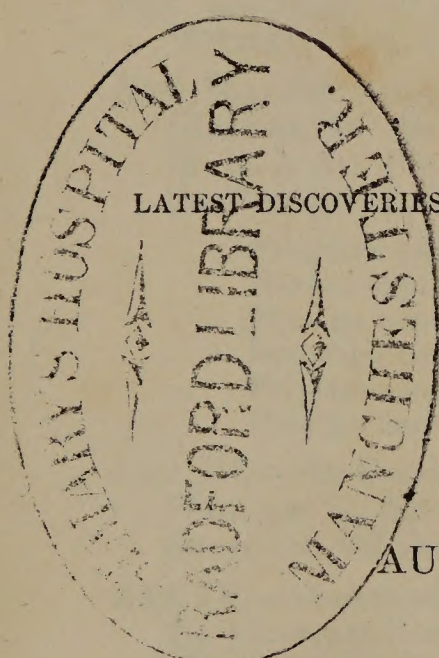
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1. Recent Advances in the Physiology of Motion, the Senses, Generation, and Development. By William Baly, M.D., and William Senhouse Kirkes, M.D., being a Supplement to the second Volume of Professor Müller's Elements of Physiology. London: Taylor and Walton, 1848. 8vo. pp. 132.
2. Notes on Unfeigned Insanity. By C. Lockhart Robinson, M.D., Medical Staff, attached to Military Lunatic Asylum, Yarmouth, &c.
3. Elements of Natural Philosophy, &c. By Golding Bird, A.M., M.D., F.R.S., F.L.S., Fellow of the Royal College of Physicians, &c. Third Edition, revised and corrected. London: Churchill, 1848. pp. 552.
4. A new and improved Synoptical Table of the Diseases of the Human Ear, with their Symptoms, &c., &c. By William Harvey and Thomas Buchanan, C.M., Member of the Royal Medical Society, Edinburgh, Member of the Chirurgial Society of the University of Glasgow, &c., &c., and Surgeon to the Hull Dispensary for the Diseases of the Eye and Ear. Printed by J. Pulleyn, Hull.
5. Clinical Observations on the Pathology of continued Fever, &c. By Edward Latham Ormerod, M.B., Caius College, Cambridge. London: Longman, Brown, Greene, and Longman, 1848. pp. 244.
6. The Cyclopædia of Anatomy and Physiology. By Robert B. Todd, M.D., F.R.S., Fellow of the Royal College of Physicians, &c., &c., and King's College, London. Parts XXX. and XXXI. London: Longman, Brown, Greene, and Longman, 1848.
7. Royal-Edinburgh Asylum Physicians' Report, 1847. By David Skae, M.D. Pamphlet, pp. 25.
8. A View of a Reformed System of Medical Practice, from the Established, the Homœopathic, and other Schools of Medicine. By Joseph Gilioli, M.D., Edinburgh, LL.D. Bononiæ. London, O'Dell. Tract, pp. 24.
9. The Microscopic Anatomy of the Human Body in Health and Disease. By Arthur Hill Hassall. London: Highley. Part XIII. pp. 442.
10. The Fifth Report of the State Lunatic Asylum in New York.

11. *Observations on the Cultivation of Organic Science.* By R. D. Grainger.

12. *The Cure of Cataract, with a practical Summary of the best Modes of Operating (Continental and British).* By Hugh Neill, Surgeon to the Liverpool Eye and Ear Infirmary. Liverpool: Deighton and Laughton. London: Churchill, 1848. 8vo. pp. 224.

13. *On Functional Diseases of the Liver, associated with Uterine Derangement, embracing the Consideration of special Physiological and Pathological Relations hitherto unnoticed.* By Butler Lane, M. D., M. R. C. S. E., &c. London: Henry Renshaw, 1848.

14. *Principles of Medicine, comprising general Pathology and Therapeutics, &c.* By Charles J. B. Williams, M. D., F. R. S. Second Edition. London: Churchill. 8vo. pp. 533.

15. *The Wounds and Injuries of the Chest, being the Third Part of the Lectures on some of the more important Points in Surgery.* By G. S. Guthrie, F. R. S. London: Renshaw. 8vo. pp. 109.

16. *On the Nature and Treatment of Stomach and Renal Diseases.* By William Prout, M. D., F. R. S. Fifth Edition. London: Churchill, 1848. pp. 595.

17. *Returns of Agricultural Produce in Ireland in 1847.* Dublin: Alexander Thom. Fol. pp. 92.

18. *Hospital Elections and Medical Reform, addressed to the Governors of St. George's Hospital, and to the Profession.* By Edward Lee. London: Churchill, 1848.

19. *On the Condition of the Irish Labourer, being a Paper read before the Dublin Statistical Society.* By W. N. Hancock, LL. B. Dublin, 1848. Tract. pp. 12.

20. *A Dispensatory, or Commentary on the Pharmacopœias of Great Britain, comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and doses of the Articles of the Materia Medica.* By Robert Christison, M. D., Professor of Materia Medica in the University of Edinburgh. Second Edition, revised and improved, with a Supplement, containing the most important new Remedies. Edinburgh: Black. London: Longman, 1848. 8vo. pp. 1003.

21. *Anatomische Beschreibung des Menschlichen Augapfels von Ernest Brücke, Mit einer Kupfertafel.* Berlin, 1847. 4vo. Reimer. pp. 70.

22. *Entwurf einer Anatomischen Begründung der Augenkrankheiten.* Von Dr. Jos. Hasner Edlem, V. Artha, M. D. Prag., 1847. 8vo. pp. 261.

23. *Bibliotheca Medico-Chirurgica et Anatomico-Physiologica.* Von Wilhelm Engelmann. Leipzig, 1848. pp. 734.

24. *Ledetraad Pharmacodynamiten af E. Etto, M. D. Christiana, 1847.* pp. 330.

25. *Beiträge zur Gehör-und Sprach-Heilkunde.* Von Medizinalrath. Dr. Edward Schmaltz 111 Heft mit einer Tafel. Leipzig, 1848.

26. *A Treatise on the Gout, its Nature and Treatment; read before the Medical Society of Guy's Hospital, January, 1848.* By H. B. C. Hillier, M. D. London: Longman, Brown, Green, and Longman, 1848.

27. *An Essay on the Epileptic Form of Puerperal Convulsions, being an attempt to elucidate the Nature and Treatment of the Disease, by an Appeal to Anatomy, Physiology, and Pathology.* By Joseph Thompson, M. R. C. S., London. Nottingham, printed by B. S. Oliver, Long Rowe, 1848. pp. 74.

28. *Insanity tested by Science, and shown to be a Disease early connected with permanent organic Lesion of the Brain.* By C. M. Burnett, M. D. London: Highley, 1848. pp. 107.

29. Females and their Diseases, a series of Letters to his Class. By Charles D. Meigs, M. D., Professor of Midwifery and the Diseases of Women and Children, in the Jefferson Medical College, at Philadelphia, &c. Philadelphia: Lea and Blanchard, 1848. pp. 700.

30. A Treatise on Diet and Regimen. By William Henry Robertson, M. D. Fourth Edition. Part VI. complete. pp. 353; also Vol. ii.

31. Diseases of the Liver, associated with Uterine Derangement. By Butler Lane, M. D., M. R. C. S. E. London: Renshaw, 1848. 8vo. pp. 32.

32. The Ethnological Journal, a Magazine of Ethnography, Phrenology, and Archæology, considered as Elements of the Science of Races, with the Applications of this Science to Education, Legislative and Social Progress. Edited by Luke Burke, Esq. London: Baillières. Nos. 1 and 2.

33. Practical Observations on the Pathology and Treatment of Typhus Fever. By R. Albert Henry Callanan, M. D. Second Edition. London: Renshaw, 1848. 8vo. pp. 102.

34. A Treatise on the Practice of Medicine. By George B. Wood, M. D., Professor of Materia Medica, &c., in the University of Pennsylvania. In two Volumes. Philadelphia: Gregg, Elliott, and Co., 1847. pp. 791 and 840.

35. A Dictionary of Practical Medicine, comprising general Pathology, the Nature and Treatment of Diseases of Morbid Structures, &c., &c. By James Copland, M. D., F. R. S. Part XIII. London: Longman, Brown, Green, and Longman, 1847.

36. Etherization, with Surgical Remarks. By John C. Warren, M. D. Boston: Trickner and Co., 1848. pp. 96.

37. The Eighteenth Annual Report of the Belfast District Asylum. Belfast: Finlay, 1848. Pamphlet, pp. 34.

38. A Practical Treatise on the Diseases peculiar to Women, illustrated by Cases derived from Hospital and Private Practice. By Samuel Ashwell, M. D., Member of the Royal College of Physicians, London, and late Obstetric Physician and Lecturer to Guy's Hospital. Third Edition. London: Highley, 1848. 8vo. pp. 772.

39. Suggestions on the Dublin Improvements. By Isaac Farrell, Architect and Civil Engineer. Dublin: McGlashan, 1848. Pamphlet, pp. 35.

40. Memoranda for Young Practitioners in Midwifery. By Edw. Rigby, M. D., &c. Second Edition, considerably enlarged. London: Renshaw, 1848. 12mo.

41. Practical Observations on the Administration and Effects of Choloroform, especially in its Application in case of Natural Labour. By J. H. Stallard, M. R. C. S. London: Churchill, 1848. Pamphlet, pp. 22.

42. General Index to the British and Foreign Medical Review, or Quarterly Journal of Practical Medicine and Surgery. Edited by John Forbes, M. D. London: Churchill, 1848. 8vo. pp. 303.

43. The Psychological Journal for July.

44. The British Journal of Homœopathy, for July.

45. Little's Living Age, No. 201, for March, 1848. Boston.

46. The Hunterian Oration for 1848. By R. D. Grainger, F. R. S. London: Highley. Pamphlet, pp. 60.

BOOKS AND PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. London: Highley. (Reed. No. for July).

2. The Edinburgh Medical and Surgical Journal; exhibiting a concise View of the latest and most important Discoveries in Medicine, Surgery, and Pharmacy. Edinburgh: Black. (Reed. No. for July).

3. Transactions of the Medical Society of London. London.

4. The Transactions of the Provincial Medical and Surgical Association. London.

5. Transactions of the Medical and Physicall Society of Bombay. Bombay.

6. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Reed. regularly).

7. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Edited by N. H. Ranking, M. D. London: Churchill. (Reed. regularly).

8. Guy's Hospital Reports. London: Highley.

9. The Pharmaceutical Journal and Transactions. London. Edited by Jacob Bell. (Reed. regularly).

10. The London, Edinburgh, and Dublin Philosophical Magazine, and Journal of Science. Conducted by Sir David Brewster, Richard Taylor, Richard Phillips, and Sir Robert Kane. London: Taylor. (Reed. regularly.)

11. Monthly Journal of Medical Science, in which is incorporated The Northern Journal of Medical Science. Edinburgh: Sutherland and Knox. (Reed. regularly).

12. The Athenæum—Journal of English and Foreign Literature, Science, &c. London. (Reed. regularly).

13. London Medical Gazette, or Journal of Practical Medicine. London. (Reed. regularly).

14. The Medical Times. London. (Reed. regularly).

15. Provincial Medical and Surgical Journal. London. Edited by Robert Streeten, M. D. Worcester: Dighton and Co. (Reed. regularly).

16. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D., Philadelphia. (Reed. No. for April, 1848).

17. The Medical Examiner and Record of Medical Science. Edited by R. W. Huston, M. D. Philadelphia: Lindsay and Blackeston.

18. The New York Journal of Medicine and the Collateral Sciences. Edited by C. A. Lee, M. D. New York: Langley.

19. The New Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences. Edited by Drs. Carpenter, Fenner, Harrison, and Hester. New Orleans.

20. The American Journal of Arts and Sciences; conducted by Professor Silliman, and E. Silliman, Jun., and J. D. Dana, New Haven. (Reed. No. for May, 1848).

21. Southern Medical and Surgical Journal. Edited by Paul Eve, M. D., and J. P. Garvin, M. D. Augusta: M'Cafferty.

22. The Western Journal of Medicine and Surgery. Edited by Drs. Drake, Yandell, and Colescott. Louisville, Ky.

23. The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by J. Carson, M. D., and R. Bridges, M. D. Philadelphia: Merrishow and Thompson.

24. The Boston Medical and Surgical Journal. Boston: Clapp.

25. The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum, Utica. Utica: Bennett, Backus, and Hawley.
26. The British American Journal of Medical and Physical Science. Montreal. (Recd. regularly).
27. The Southern Journal of Medicine and Pharmacy. Edited by S. D. Sinclair, M. D., and P. C. Gaillard, M. D. Charlestown: Burgess and Symes.
28. The American Journal and Library of Dental Science. Published under the auspices of the American Society of Dental Surgeons.
29. Gazette Médicale de Paris. Paris. (Recd. regularly).
30. Gazette Medicale de Strasbourg. (Recd. No. for March 20).
31. Gazette Médico-Chirurgicale a Paris. Paris. (Recd. regularly).
32. La Lancette Française, Gazette des Hôpitaux Civils et Militaires. Paris. (Recd. regularly).
33. Annales d'Oculistique, publiées par la Dr. Florent Cunier, Bruxelles.
34. Journal de Chimie Medicale, de Pharmacie, de Toxicologie, et Revue de Nouvelles, scientifiques, Nationales et Etrangers, &c. Paris.
35. Journal de Pharmacie et de Chimie, &c. Paris. (Recd. regularly).
36. L'Union Medicale, Journal des entreles scientifiques de pratiques, Moraux et professionnelles du Corps medicale. Paris. (Recd. regularly).
37. Revue Médicale Française et Etranger, Journal des Progress de la Medicine Hippocratique. Par J. B. Cayol. Paris. (Recd. No. for February).
38. Revue Medico-Chirurgicale de Paris. (Recd. No. for Feb., 1848).
39. Annales d'Hygiène Publique et de Medecine Legale. Paris: Bailliere. (Recd. No. for April).
40. Annales Medico-Psychologiques, Journal de l'Anatomie de la Physologie et de la Pathologie. (Recd. No. for March, 1848).
41. Archives Général de Médecine; Journal Complementaire des Sciences Medicales. Paris. (Recd. No. for April).
42. Bulletin de l'Academie Royale de Medecine. Paris: Bailliere. (Recd. regularly).
43. Journal des Connaissances Medico-Chirurgicales, Paris.
44. Annales et Bulletin de la Societe de Medicine de Gand. (Recd. regularly).
45. Annales de la Société de Médecine Pratique de la Province d'Anvers (établie a Willebroeck). Boom. (Recd. regularly).
46. Bulletin des Travaux de la Société Médico-Pratique de Paris.
47. Zeitschrift für die Gesammte Medicin mit besonderer Rücksicht auf Hospitalpraxis und ausländische Literatur. Von Dr. F. W. Oppenheim. Hamburg. (Recd. Nos. for December, 1847, and January, February, and March, 1848).
48. Neue Notizen aus dem Gebiete der Natur und Heilkunde, gesammelt und mitgetheilt von D. L. F. Froriep und Dr. R. Froriep. Weimar. (Recd. Nos. from July, 1846, to March, 1848).
49. Zeitschrift de K. K. Gesellschaft der Aerzte zu Wien—Redakteur Dr. Karl Haller. Wien. (Recd. Bänd 4 and 6, Heft 2 and 3 for 1847).
50. Zeitschrift für Rationnelle Medezin; Herausgegeben Von Dr. J. Henle und Dr. C. Pfeufer, Professoren der Medecin an der Universitat Zu Heidelberg.
51. Journal für Kinderkrankheiten unter Mitwirkung der Herren Dr.

Barez, und Dr. Bemberg; herausgegeben von Dr. F. J. Behrend und Dr. Hildenbrand. Berlin. (Not yet recd.)

52. Medecinische Jahrbücher des Kaiserliche Königliche Oesterreichen. Staats. Wien.

53. Oesterreichische medecinische Wochenschrift als Ergänzungsblatt der Medicinischen Jahrbuch, &c. Erstes und Zweites Quartal, 1847.

54. Journal für Chirurgie und Angenheilkunde herausgegeben von Dr. P. von Walther und Dr. T. A. von Ammon. Berlin.

55. Vierteljahrschrift für die praktische Heilkunde. Prag. Borrosch und Andié.

56. Annalen der Chemie und Pharmacie herausgegeben von F. Wöhler und Justus Liebig. Heidelberg.

57. Bibliothek for Læger, Tredie Række. Udgivet af Direktionen for de classenske Literaturselskab. Redigeret af H. Selmer. Kjobenhavn. (Recd. Nos. for July and October, 1847, and Supplement for 1845-6.)

58. Norsk Magazin, for Lægevidenskaben, udgivet af Lægeforeningen Christiana. Redigeret af Faye, W. Boeck, Lund, Voss, A. W. Münster. Christiana, Feilberg, und Landmark.

59. Gazzetta Medica Lombarda. Diretta dal Prof. Panizza, formerly the Gazzetta Medica di Milano. Milan. (Recd. Nos. 1, 4, and 6, for 1848).

NOTICES TO CORRESPONDENTS.

WE beg to correct an error which appeared in the Memoir of the late Dr. Alexander Jackson, in our last Number. The sum of money left by that benevolent gentleman, to build and endow an asylum for seven old men and seven old women, in the town of Aughnacloy, County Tyrone, was £10,000, and not £8000. In thus allocating a portion of the fruits of his industry and talent to the maintenance of the aged and infirm, the last of our State Physicians—whose many social virtues and noble qualities of head and heart, endeared him to a large circle of friends—may, in his benevolence and generosity, be classed among those noble members of the medical profession in Ireland, who bequeathed their fortunes to their country. We the less regret that Dr. Jackson did not endow some medical institution with this money, since it is likely that the all-absorbing Poor Law will very shortly take under its protection those institutions which were intended by their founders to be conducted and managed either by the Profession or disinterested lay citizens.

It is our intention to publish, from time to time, either as Original Articles or Reviews of Books, some account of the state of popular medicine in Ireland, and particularly of those medical superstitions which still exist among the people. We will therefore feel obliged by our friends and Subscribers forwarding us such information on this subject as their localities afford. From the very rapid revolution which society is at present undergoing in this country, it is not likely that many popular superstitions will long survive; and therefore it is of importance that these inquiries should be set on foot without delay by those who are anxious for their preservation.

We beg leave to inform our French and Belgian colleagues, with whose Periodicals this Journal has been recently exchanged, that a very large amount of postage is charged upon their periodicals; and therefore we would suggest the propriety and convenience of making such arrangements, through some London bookseller, as may procure the delivery of their periodicals in this city free of expense.

Our next Number will contain a Report upon the recent Epidemics in Ireland; and we earnestly entreat the aid of our professional brethren throughout the country in assisting us to procure materials for this labour.

The work of death still proceeds. Since the issue of our last Number we have lost several of our professional brethren, among whom we may mention the venerable and learned Dr. Hugh M'Donnell, of Cavan, who fell a victim to fever in his seventy-fifth year; Dr. Thomas Smith, of this city, also died at Skibbereen; Dr. Lynch, of Ballinrobe; and Dr. Myles, of Ballymachugh, have likewise perished; as well as Dr. Gardiner, of Hollymount; Mr. Richard Stevenson, Apothecary to the Cork-street Fever Hospital; Dr. Samuel O'Beirne, Lettermore, Galway; Dr. Ellis, of Cork; and Mr. J. T. Oben, Assistant to the Headford Dispensary. The city of Limerick and the profession has lost in Dr. William Griffin one of its brightest ornaments; a biographical sketch of this lamented physician will appear in our next.

THE DUBLIN QUARTERLY JOURNAL

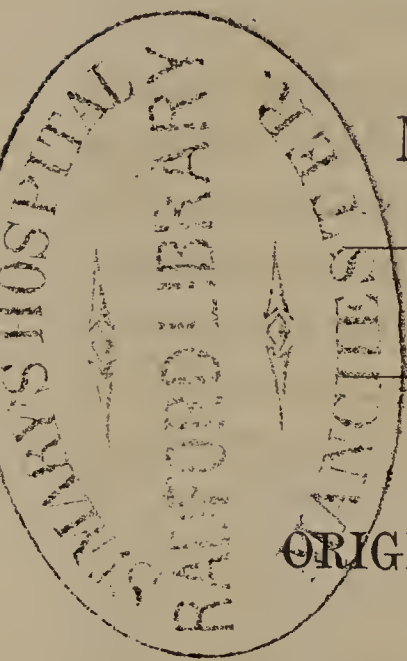
OF

MEDICAL SCIENCE.

AUGUST 1, 1848.

PART I.

ORIGINAL COMMUNICATIONS.



ART. I.—*Cases of Tetanus, with Observations.* By SAMUEL G. WILMOT, F. R. C. S., Resident Surgeon of Steevens's Hospital.

THERE is not to be found amongst the numerous diseases which it is, from time to time, the hospital-surgeon's opportunity to witness, one more calculated to excite his commiseration and to enlist his sympathy,—one in the treatment of which he feels more deeply mortified at the imperfection of his knowledge,—and one which, consequently, urges itself with stronger claims on his consideration,—than that designated tetanus. Notwithstanding the vast improvement our knowledge of disease generally has lately acquired, tetanus, with other diseases of a kindred nature, still lies involved in much obscurity. Our knowledge of its pathology is still imperfect; we possess no fixed ideas of its anatomical characters; and as to its treatment we are completely in the dark. It is true the light thrown on

the physiology of the spinal cord by the investigations of Dr. Marshall Hall, the results of which have been confirmed by the experiments of Professor Müller, and still further corroborated by the more recent elaborate researches of Mr. Grainger and Dr. Carpenter, has tended considerably to elucidate the nature of this disease; but that kind of information which to the right understanding a disease is essential, we still require with respect to tetanus. This being the case, our treatment could be nothing but empirical, and such it has always been. But even long experience has not supplied a knowledge of the means of cure. For the testimony of all practitioners is to establish the facts, that the acute traumatic cases of tetanus almost invariably rush precipitately to a fatal termination, apparently uninfluenced by every therapeutic measure which the practitioner has it in his power to employ; while the idiopathic (except the very acute cases of tropical climates) and chronic traumatic varieties of the disease generally recover under the most opposite plans of treatment. With a view to describe the chief particulars of tetanus in the manner they can best be studied, I have put together four cases, in all of which the symptoms of the disease were well marked, and its more prominent features delineated. Each of these also, by possessing certain distinguishing characters, belongs to a different class, and thus serves the purposes of contrast. The first is a case of idiopathic tetanus; the second, one of the acute traumatic form; the third is a case of chronic traumatic tetanus; the fourth is rather an uncommon case, local clonic spasms having preceded for more than two days the supervention of tetanus, which they then accompanied nearly through its entire course. To the kindness of Mr. Cusack and Mr. Colles I am indebted for permission to avail myself of three of the following cases.

CASE I.—William Brown, aged twelve years, was admitted into Steevens's Hospital on the 1st September, 1845, under Mr. Cusack. His mother gave the following history of his case:—On Wednesday, the 27th ult., at Donnybrook Fair, he was

placed on horseback, and, to prevent him falling, he was tightly tied on, by means of strong cords attached to his ankles, and brought under the animal's belly. In order, then, to show off the horse, he was made to gallop and leap for a considerable time. When taken down the boy was in a profuse perspiration, but, according to his own account, had sustained neither hurt nor fright. On the following day (Thursday) he complained of slight difficulty in swallowing, caused, as he said, by "lumps in his throat." His mother mistaking this for the effect of an ordinary cold, bathed his feet, and rubbed some camphorated spirits to the outside of his neck. On Friday morning he awoke with headach and stiffness in the articulation of the jaw, which he could not completely open. The entire of the same day he was observed to walk with a stiff gait, his head being quite erect: and he eat with his front teeth. On Saturday he experienced a shooting pain along the spine; and in addition to this, a rigid state of the muscles at the back of the neck was observable.

A medical man was now called in, who ordered a warm bath, blisters to the nape of the neck and loins, and a large dose of calomel. On Sunday morning regular spasms set in, for the relief of which he was bled, had another warm bath, and the dose of calomel was repeated. In the evening he was seen by Mr. Fleming, who, recognising the disease to be tetanus, recommended his removal at once to the hospital. On admission his countenance exhibited the true tetanic expression: the eye-lids were half closed, the eyes themselves possessing a remarkably brilliant lustre; the angles of the mouth were slightly retracted; the lips tightly pressed together, and the *alæ nasi* distended; sometimes his forehead was thrown into transverse wrinkles. These appearances collectively gave to the face a settled sardonic smile, but were more manifest during a paroxysm. He now lies, bathed in profuse perspiration, diagonally across the bed, on his right side; his thighs are drawn up towards his

abdomen, and his head and spine are curved backwards. None of the muscles, except the masseters, and those at the back of the neck and along the spine, are as yet rigid: the affection of the former deprives the patient of the ability to open his mouth beyond what can admit the introduction of one of the fingers.

The patient's chief distress seems to arise from the accumulation of mucus in the trachea, which he can with the greatest difficulty expectorate; the effort to do so always induces a paroxysm. During a paroxysm, which is but of momentary duration, the affected muscles become increased in rigidity, the opisthotonos is more marked, his respiration becomes hurried, his pulse accelerated, and the teeth are firmly clenched, by which his tongue is often bitten: his urine is sometimes expelled involuntarily. The interval between the paroxysms is, when the patient is perfectly quiet, a quarter of an hour; but during the remissions they are readily excited by the least movement, his attempting to swallow, or by the effort to expectorate. The eye-balls and pupils appear unaffected; bowels confined; tongue rather dry; thirst; pulse 110, small; urine scanty. Ordered a scruple of strong mercurial ointment to be rubbed into the thighs every third hour, and to have twenty drops of the tincture of Indian hemp every two hours. A piece of Indian rubber was inserted between the teeth.

Tuesday, Sept. 2. To-day he complains of a severe pain, which shoots from the ensiform cartilage to the spine. The abdominal muscles are slightly tense, trismus is nearly complete, thirst extreme, pulse quicker; the other symptoms are in no way altered. With a view to salivate him as speedily as possible, he was wrapped in a sheet smeared with mercurial ointment, as well as being rubbed. Continue Indian hemp. Ordered eight ounces of wine daily.

Thursday, 4th. Has been purged several times to-day. Omit mercury. An anodyne enema to be administered. Con-

tinue Indian hemp. The contracted state of the sphincter ani gave considerable opposition to the introduction of the enema tube.

Friday, 5th. Diarrhœa still continues; since its supervention perspiration has ceased; skin is now dry; the paroxysms are as frequent, but are not so violent. Mucus still collects in the trachea, and so copiously sometimes, that during a paroxysm there is fear of suffocation. He is hungry, but refuses to indulge his appetite, not so much from the difficulty he finds to swallow, as from fear of a spasm, which always results from the attempt. He complains of extreme debility. Sleeps none; thirst less urgent; pulse 120. Ordered an anodyne enema, with acetate of lead. Continue wine and hemp.

Saturday, 6th. Purging has ceased, and there is now a return of perspiration. He now lies stretched on his back; the abdominal muscles are more contracted; the muscles of the thigh and arm are somewhat rigid, as are also the pectorals; the muscles of the fore-arm and leg are unaffected. The paroxysms during the night were much less frequent. Ordered to re-commence mercury, the ointment of which is to be rubbed in actively, and the sheet spread with it to be again employed. Five grains of Dover's powder every two hours were substituted for the Indian hemp, which appears to have made no impression upon the disease. Wine to be increased to eleven ounces; to have chicken-broth.

Sunday, 7th. His attendant reports, that during the night the paroxysms were more frequent and violent than they have yet been. To-day, however, he is better; he can open his mouth a little wider, and can eat panada and arrow-root. Bowels confined; pulse rapid. Ordered an enema of plain tepid water. Wine, nourishment, and medicine to be repeated.

Monday, 8th. To-day the interval between the paroxysms is becoming very much longer. He lies on his back, with his lower extremities stretched, his feet extended, and the ankle

and knee-joints so stiffened as to be almost inflexible; the attempt to bend them by means of manual force is productive of excessive pain. Tetanus, more properly so called, may be now said to exist; almost all the voluntary muscles, except those of the fore-arms, appear to participate in the general tonic spasm. He craves for food, which he can now eat with comparative ease. Bowels not yet freed. An enema containing castor oil to be administered. Repeat the rest of the treatment.

Wednesday, 10th. Since last report he has seldom had a regular spasm; those which do occur are generally partial, being confined to the muscles at the back of the neck. Occasionally, however, he receives a sudden jerk of the entire spine backward; this is preceded by a darting pain along the course of the spinal column. Opisthotonos is still well marked; the dorsal and abdominal muscles have undergone no relaxation, the latter are remarkably hard and knotty. He can open his mouth nearly to the full extent, and can expectorate with tolerable ease the mucus which is still secreted in considerable quantity. Countenance less tetanic; perspires now only when he makes an effort; appears very drowsy; sleeps well; pulse 100; bowels never freed except by the assistance of enemata. He has not yet been properly salivated.

Saturday, 13th. He still improves; there are no regular spasms; his appetite has become voracious, which is a cause of much surprise to his mother, who states that previously to the accession of the disease he was always a very poor eater.

Tuesday, 16th. Though so long a time using mercury he has not been salivated. He changed his position for the first time to-day; he is now in a half-sitting posture in the bed. Still the dorsal muscles have not in the least degree parted with their rigidity, and the abdominal feel even firmer; the neck is retained steadily backwards. Though the ankle-joints are still extended and stiff, the muscles of the limbs are nearly relaxed; the rigidity appears to be in the joints themselves,

which he cannot bear to be moved. The expression peculiar to the disease has nearly disappeared, but enough remains to characterize the case. He is exceedingly irritable; speaking always seemed a trouble to him, but now, when questioned, his words in reply are short, and are abruptly pronounced, as if with considerable effort. Complains much of debility. Pulse has become slower.

The mercury was ordered to be omitted, and the Dover's Powder, which was reduced to three grains every fourth hour, to be continued. A liniment of belladonna to be rubbed along the spine. Wine and strong nourishment.

Thursday, 18th. He is occasionally seized with a sudden momentary spasm of the dorsal muscles. Countenance is improving; appetite less inordinate. To continue the same treatment. He has been eating meat for some days.

Friday, 19th. Was very restless last night; slept none; this he attributes to extreme dryness of the mouth and fauces, from more or less of which, he states, he has suffered for the last week. Other symptoms the same. Omit Dover's Powders.

Sunday, 21st. He left his bed this day for the first time. Spasms of the dorsal muscles still sometimes occur, and are so sudden that if they happen to seize him while standing, he would frequently be prostrated on his back, unless assistance were at hand.

Tuesday, 23rd. There has been no kind of spasm since last report. He can now stand more erect; the head is still carried somewhat behind the axis of the body; he can bring it, however, forwards, but not completely. The rest of the spine has now acquired rather an anterior curve, which, together with the elevation of his shoulders,—his head appearing to be buried between them,—give him a remarkable stoop. He can walk with the assistance of a stick, but finds much difficulty in doing so. He was recommended by Mr. Cusack to return home for change of air.

During the entire progress of this case the patient's intellect

was never at any period impaired; the cerebral functions never appeared affected. The muscles of the fore-arm were those only which were not implicated in the general tonic spasm which appeared to pervade all the other voluntary muscles of the body.

This is a very rare form of tetanus in these countries; our hospitals seldom afford examples of it. After perusing the history of the boy's case, as it was given by his mother, no one, I think, will doubt that the disease arose from checked perspiration, which a peculiar state of system, heightened, probably, by the excitement consequent upon concurrent circumstances, rendered effectual to produce; whereas otherwise simple cold might only have been the result of the same cause. The above case illustrates well the difference between the idiopathic and traumatic forms of tetanus, as well in the period at which each occurs after application of the exciting cause, as in the duration of their course and their termination. In the present case we would suppose not more than twenty-four hours elapsed from the time the patient was exposed to the cause, until the first indication of the disease was evinced. The medicines which were employed seemed to have had little effect, and the impossibility of establishing satisfactory ptyalism concurs with what has been generally observed in all forms of tetanus. The readiness with which general spasms were excited by the least impression on the extremities of the nerves, as by moving, swallowing, coughing, &c., affords strong pathological support to the theory of the reflex function, and demonstrates the dependence of tetanus upon the organ which is the seat of this function. The excessive secretion of mucus by the bronchial membrane, which, in this case, was a source of much distress, is a circumstance which usually occurs in tetanus, and it is much to be dreaded, for when spasm of the glottis co-exists, the former assists materially to produce suffocation. A point connected with this case which may be noticed is, the remarkable alternate action between the skin and intestinal

membrane; it illustrates the vicarious relation between these parts.

I have been kindly put in possession, by Mr. Fleming, of some particulars which invest this case with additional interest. This boy had been quite recently under his care with fever, in the North Union temporary Fever Hospital, and through the entire course of the disease tetanic complication was a prominent feature: rigidity of the muscles at the back of the neck which retained the head backwards, spasmodic twitchings of the facial muscles, and the characteristic expression of countenance, were the symptoms chiefly observed. Another circumstance noted by Mr. Fleming in this boy's fever was, a marked tendency to sloughing of all parts exposed to pressure, at an unusually early period of the disease. The first circumstance proves the predisposition in this boy's system to become affected by tetanus by whatever would make a powerful impression on the nervous centres; the second suggests the question,—does the energy of the true spinal cord hold an inverse relation to that of the brain?

CASE II.—Patrick Tierney, between forty and fifty years of age, was admitted into Steevens's Hospital on the 19th March, 1846, under Mr. Wilmot, with extensive burn of the lower extremities, which he received two hours previously by falling into a lime-kiln. Almost the entire of the cuticle, from the knees down, was raised, hanging off in shreds in some places, thus leaving quite undefended the true skin, which was itself uninjured: from the knees to the hips were several large vesications. The burned surfaces having received the appropriate treatment, attention was afterwards directed to the accompanying fever, which, in the course of a few days, from being high, gradually assumed a typhoid character. On the morning of the 29th inst. (ten days from the receipt of the burn), while the denuded surface of the skin of the extremities appeared to be suppurating healthily, the following tetanic condition was, for the first time, observed: difficulty in swallowing,

with stiffness in the neck, and rigidity of the muscles in its vicinity ; abdominal muscles tense and contracted ; expression of countenance truly characteristic of the disease. He complained of severe pains shooting upwards from the legs and thighs. Ordered half a drachm of the tincture of Indian hemp every fourth hour.

9 o'clock, P. M. Since last report (twelve hours interval) the disease has made rapid progress. Paroxysms recur frequently ; they last about a quarter of a minute, and are excited by every movement, especially the attempt to swallow. The dorsal and abdominal muscles are remarkably contracted ; there is opisthotonos, though not in a very marked degree ; trismus, which is almost complete. The countenance is more tetanic ; pulse quick and weak ; thirst ; profuse sweating ; bowels confined. There is some slight delirium. Ordered tincture of Indian hemp, to be given in the same dose every two hours ; punch *ad libitum*. An enema containing turpentine to be at once administered.

30th, 9 o'clock, A. M. All his sufferings are much aggravated. The paroxysms are feebler, and of shorter duration, but the interval between them is rapidly shortening. The bronchial tubes are filled up with mucus, which adds much to his distress ; debility extreme. Repeat the treatment prescribed at last visit.

10 o'clock, P. M. Has just expired in a paroxysm. For about twenty minutes previous to dissolution he was free from paroxysms, and the muscles were relaxed. A minute inspection of the spinal cord was instituted, but nothing beyond some congestion of its membranes on its anterior surface was discoverable. The other internal organs were examined ; engorgement of the lungs was all that could be found.

The preceding case contrasts with the one before it in the length of interval from the cause to the effect, and its rapid progress to a fatal issue. The exciting cause, a burn, is very fertile in producing this terrible disease. The aberration of

intellect which was noted in this case is a circumstance which forms no exception to the usually observed unimpairment of the faculties in tetanus, for it was clearly attributable to the typhoid fever which had pre-existed, and which was, of course, exacerbated by the occurrence of this complaint. The exemption from spasm, and the relaxation of muscles for a short time previously to death, are occurrences frequently observed in tetanus ; and, indeed, when such conditions coincide with much prostration of the vital powers, they should be viewed rather as the precursors of dissolution than as the harbingers of recovery. The *post mortem* examination demonstrates what has been generally observed, an absence of any inflammatory signs ; the congestion which appeared was, probably, merely hypostatic, or the effect during life of the excitement of the cord.

CASE III. — Monks, aged 28, a butcher, generally healthy, and of temperate habits, was admitted by Mr. Cusack into No. 7 ward on the 30th December, 1846. He states that a month ago he bruised the top of the index finger of his left hand in a windlass. On the night of the 24th inst. he felt some pain in the injured finger, the nail of which was loose. The pain continued the entire of the following day ; this he attributed to the action of frost, which then prevailed. Throughout the day of the 28th he felt very drowsy, with a frequent tendency to yawn and stretch ; the former act he found he could only imperfectly accomplish, owing to some stiffness which he felt in the articulation of the jaw. The following is the condition of the patient on admission : countenance strongly tetanic ; trismus considerable ; the top of a finger can hardly be passed between the teeth ; masseter muscles very rigid ; rigidity of muscles of abdomen and at back of neck. There is no inclination to opisthotonos ; no difficulty in swallowing beyond what arises from the locked state of the jaws ; perspiration absent ; urine scanty, but normal in quality ; bowels confined ; pulse 92. The nail appears to be in process of separation ; pus

exudes freely from beneath it. Ordered a turpentine enema immediately; two grains of calomel, two of camphor, and four of Dover's Powder, to be made into two pills, which are to be taken every third hour; water dressing to the finger.

January 1, 1847.—The abdominal muscles have become more firmly contracted, and the dorsal are now rigid; there are no paroxysms, nor as yet opisthotonos, but he complains of cramp frequently in the abdominal muscles; jaws are more locked; occasionally there is spasmodic action of the masseter muscles, which gives rise to much pain; there is no mucus in the trachea, but his mouth is filled with a quantity of frothy saliva, from which there arises a strong fœtor; tetanic expression better marked; there is some perspiration, but it is confined to the head and neck; bowels freed by enema; pulse 112. Ordered half a drachm of mercurial ointment to be rubbed in every third hour; half a drachm of tincture of Indian hemp to be taken every third hour. To have eight ounces of wine, and strong beef-tea.

2nd. Slept well last night; he had one momentary paroxysm last evening; complains chiefly of spasm of masseter muscles; it takes place so suddenly and sometimes so violently that his tongue is frequently bitten by the teeth. The spasms occur particularly on his dozing to sleep; the muscles about the neck (which has now acquired a backward curve) are rigidly contracted, the sterno-cleido-mastoidei are particularly prominent; he had vomiting once during the day; partial perspiration more profuse; gums slightly affected by the mercury; pulse 100; bowels confined; urine high-coloured, with a lateritious deposit in it. To continue hemp, stimulants, and nourishment; the tincture of aconite to be applied over the masseter muscles.

3rd, 9 o'clock, A. M. Spent a very bad night; he has now slight momentary paroxysms, during which there is opisthotonos; they occur only seldom, and seem to be occasioned by any movement of his body; the spasms about the jaws are so severe every time he attempts to sleep that he is quite ex-

hausted for want of rest; he complains of a sharp pain shooting along the sternum from the ensiform cartilage; pulse 112. Ordered half a drachm of nitrous spirit of ether, and the same of laudanum, in an ounce of camphor mixture, to be taken every third hour; a drachm of the strong mercurial ointment to be rubbed in every third hour: punch in addition to his wine.

9 o'clock, P. M. He is easier this evening; has been dozing during the day, but never obtains a regular sleep; abdominal muscles are as hard as a board; pulse 100; his gums are smartly touched by the mercury: repeat the treatment.

4th. He is better to-day; the paroxysms have ceased; opisthotonos is only partial, being confined to the cervical portion of the spine; can open his mouth wider; tetanic expression less; still complains of cramps of the abdominal muscles, and also of the dorsal occasionally; pain along the sternum persists; pulse 100: repeat the treatment as before.

5th. He can open his mouth considerably to-day, and is seldom annoyed by spasms of the masseters; he can eat soft food without much difficulty; has lost the pain along the sternum; feels stronger; he is now actively salivated; pulse 120. Mercury to be omitted; stimulants, nutriment, and the draughts to be continued.

7th. He has got a change for the worse; the jaw is nearly as much locked as it ever had been, and the spasms about it are frequent and severe; the regular general spasms are few and slight; the neck is very much curved backwards, and he cannot make the least attempt to bring it forward; pulse 124. Omit draughts; the sixth of a grain of the extract of belladonna to be taken every two hours; punch and wine to be increased in quantity.

8th. Complains of extreme debility; there is now observable a more general tendency in the spine to opisthotonos; perspiration profuse; bowels confined; pulse 130, weak and compressible. An enema to be administered; belladonna repeated.

9th. Spine is more curved, but he feels himself better; all the muscles of the trunk, both anteriorly and posteriorly, are affected with tonic contractions; those of the neck are very prominent, especially the sterno-cleido-mastoidei, which stand out in relief; the outlines of some of the affected muscles are defined in a remarkable manner; the muscles of the upper and lower extremities are not engaged in the tetanic condition; the pulse has fallen several beats; perspiration less. Belladonna to be increased to a quarter of a grain; stimulants to be repeated.

10th. He is better to-day; pulse 104.

12th. He still improves; the muscles are yet, however, very rigid; but he suffers no longer from the local cramps he complained of, and the spasmodic action of the masseters: repeat the last prescribed remedies.

14th. Countenance has nearly lost the peculiar expression; muscles about neck much less rigid; he can bend his head slightly forwards. To continue as before.

20th. A great improvement has taken place; dorsal muscles are losing their spastic rigidity; but the abdominal and the pectorals are still firmly contracted; opisthotonos has disappeared, and he can now nearly touch his chin to the sternum; spasm of masseter muscles only occurs upon his falling to sleep; tetanic expression nearly gone; sleeps better; appetite good; bowels always confined, they require to be constantly freed by enemata; skin cool; no perspiration; pulse 100. Omit medicine; repeat wine, punch, and nourishment.

29th. Since last report he has made great progress; countenance has resumed almost its natural expression; all the muscles of the neck and trunk (except abdominal, which are still rigid), though firmer than natural, are so far relaxed as not to interfere with any movement of the body; he can bend his head completely forwards; feels a great acquisition of strength; perspires only at night, and not very much; appetite good; he has been for some days past eating solid meat; sleeps well;

pulse 88. The nail of the injured finger was, in the course of the disease, cast off, and upon his leaving hospital the part was perfectly healed.

The length of time that elapsed from the receipt of injury to the development of the disease, its long duration, and mild course, the fewness of general spasms, and its favourable termination, stamp the case just cited as a good example of chronic tetanus. The symptoms usually said to be premonitory of tetanus were here well marked, but how far they can generally be relied upon is very questionable. The absence of dysphagia, which was remarked in this patient's case, is an exception to the general rule; mostly there is extreme difficulty in swallowing, and it occurs at a very early period of the disease. Pain in the injured part, which in the present case occurred prior to the disease, is not always observed. The remedies administered appeared to exercise no decided control over the case; a slight amelioration in the symptoms was observable upon the establishment of complete ptyalism, but shortly afterwards they regained their original severity, and became even exacerbated. A point worthy of remark in this case is the great fluctuation which was observed in the rate of the pulse.

CASE IV. — Coyne, aged 30, a labourer, of healthy aspect, and temperate in his habits, was admitted into No. 4 ward, 15th October, 1845, under the care of Mr. Colles, in consequence of a severe compound and comminuted fracture of both bones of the right leg about its centre.

On the 25th instant (ten days from receipt of injury), he was seized with spasms of the leg and thigh of the injured limb; they recurred every two or three minutes, and lasted but for a moment, leaving the muscles quite relaxed. The sore, however, was looking healthy. Forty drops of laudanum were ordered immediately, to be repeated in two hours if necessary.

26th. The spasms still continue unabated. Ordered three

grains of camphor and one of extract of opium, every fourth hour.

27th. The spasms persist, and are more severe. They cause excessive pain by disturbing the fractured bones; the superior fragment of the tibia is violently elevated each time they occur. He complains of debility; pulse quick, small, and weak. A tourniquet was adjusted on the upper part of the right thigh, and was tightly screwed, so as to make considerable pressure on the muscles; the entire of the limb, from the foot upwards, was then firmly bandaged to the inclined plane, upon which it has been lying since the patient's admission into hospital. To continue pills, and have six ounces of wine.

28th. The pressure exercised on the muscles by means of the bandaging and the tourniquet has in some degree mitigated the pain, but the spasms still persist. Symptoms, however, of a much more serious import, are now appearing. He complains of stiffness in the articulation of the lower jaw, which he cannot completely open. There is some rigidity of the cervical muscles; his speech is thick, but he finds no difficulty in deglutition. Expression of countenance very peculiar. Repeat pills and wine.

29th. Though tetanus is advancing, the spasms of the injured limb have not changed their clonic character. There are as yet no true tetanic paroxysms, but the dorsal muscles are in a state of spastic contraction, which gives a slight degree of opisthotonos. There is profuse perspiration, and debility extreme. He wanders sometimes in his mind. Ten drops of black drop to be taken every fourth hour. Punch *ad libitum*.

9 o'clock, P. M. Since last report he has had two hours' sleep, to which, for the last four days, he had been an utter stranger. During sleep he was free from every kind of spasm, but on his awaking they recurred with redoubled vigour. The abdominal muscles are now contracted; the jaw is more locked; countenance strongly characteristic of tetanus; pulse very quick and weak. Repeat medicine and stimulants.

31st. Tetanic spasms, during which the opisthotonos is much increased, now occur frequently. These do not affect the muscles of the injured limb, the spasms of which are still clonic, and between each of which there is hardly a quarter of a minute's interval. Perspiration profuse. He states that the only relief he receives is after taking a large quantity of punch. There is a copious discharge from the sore, which is now rather of an unhealthy character. Repeat the treatment.

9 o'clock, P. M. Though for some time back the muscles of the left limb participate in the tonic spasm, the spasms of the right limb retain their clonic character; they have become, however, diminished in energy. Thirty drops of the tincture of Indian hemp ordered to be taken every fourth hour.

November 1st, 9 o'clock, A. M. General tetanic spasms are now very frequent; the spasms of the fractured limb are merging into the tonic condition. Opisthotonos is increased. The state of the patient is truly deplorable; he cries vociferously for relief from his sufferings.

At 2 o'clock a consultation was held, and amputation was unanimously decided against. He was ordered a drachm of laudanum every hour. A strong infusion of belladonna to be applied to the wound.

9 o'clock, P. M. He appears to be under the influence of opium. There has been no spasm since 7 o'clock; the muscles are all relaxed; respiration laborious; pulse almost imperceptible; pupils contracted to the size of a pin's head. He is quite unconscious. Occasionally spasmodic twitchings of the muscles of the upper extremities are observed. Omit opium. He experienced, for the first time, difficulty in swallowing in the course of this day. He died at 11 o'clock.

Upon examining the fractured bones the fibular nerve was found tightly strung under the upper fragment of the fibula.

Though in compound fractures we have no reason to be alarmed by the occurrence of local spasms at an early period,

which as a necessary consequence are very common, still this case teaches us to be apprehensive of the results, whenever, supervening some days after the injury, they continue beyond twenty-four hours, and increase in violence, notwithstanding the adoption of treatment calculated to allay them. In fact, though the tonic and clonic spasms are different in kind, the present case proves that the presence of the latter denotes the existence of a condition which can give origin to the former, and that the co-existence of these two kinds of spasm is not incompatible. Not until the tetanic symptoms had reached their height did the muscles originally affected with clonic spasm assume tonic rigidity, which prevailed through all the other muscles. The healthy condition of the wound at the time of the occurrence of tetanic symptoms in this case is favourable to the opinion entertained by those who contend that there is no necessary connexion between the state of the wound and the disease. Sleep is so seldom procured in tetanus we have rarely an opportunity to test the validity of what has been asserted, namely, that the muscular fibre parts with its tonic contraction during the somnolent state; this case, however, would appear to corroborate that statement. Although previously to death this patient appeared to be under the narcotic influence of opium, which as a *dernier resort* was administered in such large amount, it is difficult to determine whether the entire condition was due to the effect of the drug, or if part was the consequence of that change, which, in the natural course of the disease, frequently precedes dissolution. The condition of the nerve in the fractured limb clearly reveals, not only the cause of the primary local spasms, but also that of the tetanus. The advocates for amputation in traumatic tetanus would hold up this as a good case in favour of their arguments for the operation; but it will be seen hereafter, that once irritation of a nerve has produced the least approximation to the tetanic state, removal of the irritating cause does not in

the least check its progress: the conditions for the maintenance of the disease have been already laid in the spinal cord.

The foregoing cases prove that the division of tetanus into idiopathic and traumatic, and the subdivision into acute and chronic, are no arbitrary arrangements; and to a proper mode of treatment, especially to a correct prognosis, due consideration of these divisions is essentially necessary. For, *cæteris paribus*, we may generally infer (irrespective of symptoms) a favourable issue in cases of idiopathic, and of chronic traumatic tetanus, while in the acute traumatic form the most unfavourable prediction is unfortunately very rarely proved to be erroneous. The chronicity, and consequently the mildness of a case of tetanus, is generally in proportion to the length of interval from the application of the exciting cause to the development of the disease; the reverse obtains with respect to the acuteness of the disease. The average number of days which constitutes this interval is, in acute cases, from four to fourteen,—eight or ten days is, I think, the usual period; and from fourteen days to a month in chronic cases. The few singularly rapid cases of tetanus occurring immediately upon receipt of an injury, which have been recorded, are, I feel confident, not genuine forms of the disease. It has been stated that the first indication of tetanus manifested, is a slight difficulty in swallowing. This symptom is, however, sometimes absent all through the disease, as in the case of Monks; and when present at the commencement, which it usually is, may cause deception. A much more uniform token of the impending evil, and one which, I think, occurs before every other, is to be seen in a peculiar expression of countenance. A change (very different from that palpably apparent, and more easily describable, expression which occurs in the course of the disease), of which no description can convey a perfect idea, but which, once observed, cannot fail to be again recognised, is the sure and unerring harbinger of this dreadful malady. Generally the vo-

luntary muscles first affected in tetanus are those at the back of the neck, then the dorsal, and next the abdominal. This order is, however, subject to variation; sometimes it would appear to be reversed. The pain at the ensiform cartilage, which has been looked upon by some as a pathognomonic symptom, is frequently absent, and is not essential to the disease. There is not a disease about whose pathological condition so much discrepancy of opinion prevails, as about tetanus. A spastic rigidity of some of the voluntary muscles being generally found an accompaniment of spinal meningitis, with effusion upon the cord, and either this state of congestion, or hyperæmia of the cord and its membranes, being sometimes found in cases of fatal tetanus, have led a crowd of pathologists to refer the disease to one or other of these conditions. That not one of these conditions, especially inflammation, is the proximate cause of tetanus, will, I think, be proved by the following arguments. In numberless instances autopsical examinations reveal no appreciable lesion of the spinal cord or its membranes. Indeed, so much more frequently is any sign of pre-existing disease in these parts absent than present, that, from this circumstance alone, we would be rather justified in viewing congestion or hyperæmia, which are found more frequently present than inflammatory traces, as effects of the disease, incidental concomitants, or merely hypostatic occurrences, than as holding the relation of cause to the tetanic symptoms. These states of the parts within the vertebral canal may, however, act as remote or exciting causes of tetanus, but much more frequently, I think, they are effects of the disease. We know intense cerebral excitement will often induce congestion of the brain, which may even lead to inflammation; from analogy, therefore, we might rationally conclude that excessive functional exercise of the spinal cord would be productive of similar effects. Again, if inflammation in or about the medulla spinalis was the essential cause of tetanus, the violence of the symptoms ought to bear a relation to its degree; but such is not the case.

In cerebro-spinal arachnitis (which will be seen, by the able paper of Dr. Mayne, in the third Number of this Journal, to be characterized by extensive subarachnoid effusion of lymph along the entire course of the spinal cord) the symptoms peculiar to tetanus are not present. In several cases of this cerebro-spinal disease which occurred in Steevens's Hospital during the year 1846, there was seldom observed any approach to tetanus beyond rigidity of the muscles at the back of the neck, and cervical curvature backwards. In a few instances, in which convulsions occurred at the onset of the complaint, the spasms of the muscles were of the clonic character. Besides, in many of the cases which presented the least degree of tetanic complication, *post mortem* examination disclosed the most considerable marks of inflammation and its results in the spinal arachnoid membrane, with effusion of lymph from the base of the brain to the cauda equina.

In addition to these facts it is impossible to understand how, if inflammation in or about the cord be an essential condition for the development of tetanus, that an injury of a remote part could produce it; for the opinion that inflammation travels from the part, along the course of the nerves, to the cord, appears a mere gratuitous assumption, which is disproved by the fact that a wound is often healed completely long before the least indication of the disease becomes manifest. Seeing, then, that we have sufficient evidence to prove that no lesion within the vertebral canal, cognisable by the senses, holds a necessary relation to tetanus, we must seek its cause through the medium of physiology. The fact that some of the inferior animals, when decapitated, exhibit reflex phenomena in a much more marked manner than when otherwise killed, proves that the spinal cord possesses an apparatus for the generation of motive power, quite independently of the brain. To Dr. Marshall Hall is due the credit of having first pointed out, that to the existence of such an apparatus was attributable the production of centrifugal motions by centripetal impressions on

the periphery of nerves, and of having shown that certain acts, ingestion and egestion, &c. &c., and the preservation of muscular tonicity, depend upon the exercise of the function of this part. He styles this portion of the medulla spinalis the excito-motory system, or true spinal cord, in contradistinction to that portion of it which is entirely subsidiary to the brain, and whose office is to convey to it sensitive impressions, and to carry from it the mandates of volition.

Mr. Grainger and Dr. Carpenter have done much to establish the theory of the reflex function, and have succeeded in greatly simplifying it. Now all circumstances conspire to prove that irritation in the excito-motory system is the necessary cause of tetanus; the functional excitement of it, which is the result, giving rise to augmentation of motor influence; so that the very essence of the disease appears to consist in a superabundance of that force which, in the healthy state, the spinal cord only generates in very small amount. The causes which act on the excito-motory system, so as to produce this irritation, are many and various. Dr. Hall makes a division of tetanus according as the exciting causes act directly or indirectly on the cord. He styles centric the tetanus which arises from direct causes, as injuries, diseases, and inflammation of the cord or its membranes; while that produced by impressions on the extremities of nerves he calls eccentric. Under the latter head may be classed tetanus which arises from the sudden application of cold to the surface of the body, the traumatic, and sympathetic forms.

It is the eccentric tetanus which illustrates so well the connexion between the disease and the reflex function. Here impressions of incident or excitor nerves are conveyed to the true spinal cord, where they become reflected on the motor nerves, and thus produce those violent muscular contractions of voluntary muscles which the most powerful effort of the will cannot control. A little reflection will, I think, suggest that for the production of tetanus by the usual exciting causes some

predisposition in the system is necessary. For every individual is not subject to this disease upon application of the exciting causes, which have no uniform relation to it either in kind or degree; sometimes they are most trifling: nor is the same individual at all times equally prone to its occurrence. What this tendency is the present state of our knowledge leaves quite beyond our comprehension. Vermination, long continued exposure to cold and wet, frequent changes of temperature, are laid down as predisposing causes of tetanus; more frequently, I think, they are co-operative. Equally incomprehensible with predisposition is the nature of the change which occurs in the system during the interval from the impression to the disease, in traumatic cases of tetanus; and whether the impression lies latent in the extremities of the nerves or in the spinal cord, the present state of our information does not enable us to decide. Were we able to solve this difficulty, a matter of much practical moment would be gained. If the theory of tetanus, which the arguments adduced tend to establish, be correct, the obvious indication in its treatment is to allay the irritability of the excito-motory system, with a view to diminish the excessive amount of motor power. Unfortunately, we have not as yet an agent which will effectually accomplish this end. It is not surprising that practitioners, seeing the efficacy of opium in allaying some forms of spasm, should have thought they had in this drug every qualification for the cure of tetanus. Consequently, having found moderate—even large—doses of the drug almost nugatory, they pushed its administration to such an extravagant amount, that the stomach was frequently unable to reduce one-third of it(*a*). Still this invincible disease (at least in its acute forms) could not be made to succumb. They forgot, however, that narcotics act on the spinal cord as well as on the brain; and that, while on the latter they exercised a sedative influence, they might on the former act

(*a*) See Abernethy's Lectures.

as irritants. That this remark is applicable to opium is proved by physiological experiment on some of the inferior animals. Müller found that frogs, in a state of narcotization from opium, exhibited reflex phenomena in a greatly augmented degree; the gentlest touch on the surface being sufficient to throw the whole body into the most violent tetanic spasms. It may be argued that the excito-motory system in these animals is much more irritable than that in man; and that it is unfair to infer anything relating to the human subject from what we see to occur in the lower animals; besides that cases of poisoning by opium in man do not present convulsions or reflex phenomena. But it should be remembered that in tetanus the excito-motory system of man is more than in the condition of that of the lower animals, as regards irritability; and that though, generally, opium proves fatal in the human subject without any evidences of irritation in the spinal cord, there are cases recorded by toxicologists in which most violent tetanic spasms preceded death, where very large doses of the drug had been taken. In a state of health a dose of opium capable of producing fatal coma might generally be insufficient to excite the spinal cord, but where excessive irritability of it exists, as is the case in tetanus, this medicine could not fail further to exalt it. Experience, too, corroborates the inefficiency of opium to overcome tetanus. Its failure in this disease does not seem to depend upon the difficulty there is experienced to procure its specific effect upon the brain, for in many cases this does occur, without the least improvement in the tetanic symptoms being observable. My father relates a case in which apoplexy occurred from the use of opium in tetanus, and still the disease was in no way influenced. It has been stated that the brain exercises a controlling influence over the excito-motory system; if this be the case, opium, whose effect is to lull cerebral action, must be inadmissible in tetanus. This is, however, too theoretical an objection against opium to be worthy of much consideration. As, then, we have a physiological contra-

indication to the employment of opium in tetanus, and practical experience of its inefficiency, we have no reason to place that implicit reliance in this medicine that some have done. Until, however, our views of the pathology of the nervous system become more extended, and that we are more successful in the treatment of tetanus by other means, I do not think we would be justified in discarding altogether this potent drug. Dr. Hall states that hydrocyanic acid has the power of depressing the action of the true spinal cord; if so, it is the medicine best suited for tetanus, but I am not aware that its employment has been attended with any particular success. Tobacco, from its remarkable property of producing relaxation, would appear a most appropriate agent in tetanus; one case of cure by it is recorded by Dr. O'Beirne in the third volume of the Dublin Hospital Reports. How far, however, an agent which, in order to produce the necessary impression, causes extreme prostration, amounting often to syncope, and to produce its permanent beneficial effects requires constant repetition, is admissible in tetanus, a disease marked with such exhaustion of the vital powers, is, I think, very questionable. Etherization, or asthenæsia by chloroform, seem to be measures well calculated to overcome tetanic convulsion, but as yet we have had little experience of their effects in this way; and it would appear from some circumstances that the influence of ether on the nervous system does not extend to the excitatory system. We would suppose that belladonna was capable of exerting manifest power of allaying tetanic spasm, but it did not appear to act so in the case of Monks. The very active agent, aconite, has been employed in tetanus, and cases of recovery from its use have been recorded; but all those that I have read have been mild forms of the disease. The Indian hemp has been greatly extolled in the treatment of tetanus, as well as in other nervous diseases; considerable success appears in some instances to have attended its exhibi-

tion in India, but the records of cases in this country do not entitle it to much merit as an efficient agent. Strychnine has been suggested, on the paradoxical principle, "*similia similibus curantur*." Now, though this is a perfectly legitimate principle, and one which is fully recognised in practice,—for instance, the injection into the urethra of strong solutions of nitrate of silver in the commencement of acute gonorrhœa,—its observance in the treatment of tetanus involves, I think, a fatal contradiction. For exhaustion, which is the necessary consequence of the expenditure of force, by the violent muscular contractions which occur in tetanus, is most to be dreaded; we give stimulants in large quantity to obviate it; whatever, therefore, reinforces the disease, must in proportion increase the depression, and is, therefore, highly objectionable.

Next to opium, no medicine, perhaps, has been more uniformly employed in tetanus than mercury, but as to its utility much contrariety of opinion exists. Mercury, whose therapeutic action on the system is so very extensive, and its power to control and modify diseased action generally so very marked, is an agent which would appear to be particularly adapted to the circumstances of so irresistible a disease as tetanus. However, it fails palpably in acute traumatic cases of tetanus, and on the chronic it does not seem to make any very decided impression. If we have recourse to mercury in this disease we cannot employ it too energetically, or too soon after the first evidence of the disease is given, and in conjunction with stimulants it forms the plan of treatment, perhaps, most likely to avail. The easiest and least annoying means of bringing the system under the influence of mercury (which in tetanus is most difficult), is by fumigation, and the mercurial sheet.

Blood-letting is a remedy with those who consider that inflammation of the spinal cord or its membranes is a necessary pathological condition in tetanus. Enough has been said to prove that no such condition is necessarily present; we have,

therefore, no reason on these grounds to bleed in tetanus, and a strong objection to it is, that it diminishes the strength of the patient.

Cold affusion, though said to be productive of beneficial effects in some tetanic cases in tropical climates, must generally be attended by much danger, in consequence of the extreme prostration it sometimes causes. The value of the vapour-bath has been attested by its decided utility in a few cases recorded by Sir Henry Marsh in the fourth volume of the Dublin Hospital Reports; and in a case of very severe acute traumatic tetanus, which occurred in Steevens's Hospital under Mr. Cusack, about three years ago, though the patient did not recover, he experienced so much comparative ease and comfort from a vapour-bath, that he was quite reluctant to leave it. The spasms appeared to be diminished in severity by it, though not rendered less frequent.

Of all elements in the treatment of tetanus, stimulants, with strong nutriment, are the most essential; without them, the best directed efforts in all forms of the disease would be unavailing; for, unsupported, the vital powers cannot maintain themselves under the enormous expenditure of force by the repeated violent paroxysms which are observed in some cases. I feel assured that, but for the liberal supply of wine prescribed by Mr. Cusack for the boy William Browne, ere the disease had reached its *acmé* of severity, it would have become triumphant over the vital powers. Some practitioners lay much stress upon topical treatment to the spine. The application of leeches along its course, with a view to the removal of any congestion, hyperæmia, or inflammation, which may be within, appears a useful measure; but its benefit in this way hardly counterbalances the ill-effects that accrue from the necessary disturbance of the patient. Blistering would seem to be preferable, or, better still, the actual cautery, which should be passed quickly and lightly along the course of the vertebræ.

The treatment of the wound in cases of traumatic tetanus

is a subject upon which there is no small degree of difference of opinion. The removal of the part the seat of the injury naturally appears the most rational line of proceeding, and amputation has consequently been suggested, and has had firm advocates. Experience, however, disproves the utility of this practice, which, upon physiological grounds, is unnecessary. It is found that irritation of a nerve, being transmitted to the spinal cord, produces irritation in it, but that removal of the original exciting cause does not in the least diminish the flame which has been kindled. Besides, where a predisposition to tetanus appears to exist in the system, and to be a necessary condition to render the exciting causes effectual, we have no pledge why any operation, no matter how trifling, would not be as substantial a cause of the disease as any other species of wound. Tetanus is a frequent consequence of amputations. Division of nerves, ligatures upon them, &c., are measures all open to the same objections as amputation. Division of a nerve may, however, I think, under one circumstance, be justifiable, that is, where we have proof that the nerve is so positioned that it must be exposed to excessive irritation, as by a bony spicula: here, if we cannot remove the irritating cause, if, in any part of its course, the nerve is accessible, we might divide it. To give the patient, however, a fair chance, this must be done at an early period after the injury, before, in fact, the arrival of the minimum period of time at which tetanus is observed to supervene.

The points of most importance in the above observations may be briefly summed up in the following propositions:

1st. That tetanus depends on irritation, directly or indirectly, of the excito-motory system, or true spinal cord, by which it becomes surcharged with motor influence; and that inflammation in or about the cord, or any appreciable lesion, is not an essential condition for the development of the disease.

2nd. That, while we have ample evidence, physiological

and practical, that opium is ill-calculated to fulfil the indication in tetanus, namely, to diminish the excitability of the true spinal cord, until our views become improved, and the knowledge of an anti-tetanic agent ceases to be a *desideratum*, we are not justified in discarding altogether this drug.

3rd. That our grand object in the treatment of tetanus should be, to support the patient's strength by the administration of stimulants and strong nourishment, with a view, as it were, to compensate the vital powers for their great exhaustion consequent upon the expenditure of force by the violent muscular contractions, which in some cases are excessive.

4th. That as the removal of the exciting cause, once the first evidence that irritation has been propagated to the spinal cord becomes manifest, does not in the least degree check the progress of tetanus, or abate the violence of its symptoms, all operations, in traumatic cases, are generally not only unnecessary but injurious.

ART. II.—*An Essay on the Diagnosis and Treatment of Eruptive Diseases of the Scalp*. By J. MOORE NELIGAN, M. D., M. R. I. A., Physician to Jervis-street Hospital, Lecturer on the Practice of Medicine in the Dublin School of Medicine, &c.

MUCH difficulty, both as regards diagnosis and treatment, has always existed with respect to eruptive diseases, when situated on the scalp. By most writers on diseases of the skin, they have been described without reference to their situation, being classed with eruptions occurring on other parts of the body. This I believe to be a principal reason for the obscurity which still envelopes this class of skin diseases; for the peculiar anatomical structure of the scalp, and the presence of the hair, cause a marked dissimilarity in the appearance, and a still greater difference in the treatment, of the same class and order of eruptions (so far as regards any artificial arrangement of

diseases of the skin), seated here and on other portions of the cuticular surface.

It is somewhat singular that diseases so very common should, in this advanced age of medical science, require any further elucidation;—diseases, too, which demand for their investigation the employment of but one organ of sense, that of sight; while most other affections which the physician has to diagnose require the application of much less educated senses, the hearing and the touch; and the knowledge thus derived has to be further subjected to the process of analytic reasoning.

The slight interest which this class of diseases appears to have at all times excited amongst the members of the medical profession, is, I think, to be ascribed chiefly to two causes: first, the fact of their existence not endangering life, their presence being, indeed, in many cases, not incompatible with excellent health; and secondly, the tediousness, the obstinacy, with which they are said to resist the most active treatment. To the former cause I can object nothing; for although one form of eruption of the scalp, when long existing, produces or is connected with a certain amount of mental imbecility, as I shall by and by show, I have never yet heard or known of life being shortened by its presence. Nevertheless, the loathsome character of these affections, the annoyance which they occasion to the patient—almost invariably a child or young person, and his family—and the difficulty, or even danger, which attends their cure when they become chronic, renders them, I think, as deserving of careful investigation as many other affections of a more serious character to which the human frame is subject.

The second cause, their tediousness, instead of being a reason for their neglect,—as I believe it to be the chief,—should stimulate inquiry, with the view of ascertaining the precise plan of treatment best adapted for each form, or of devising remedial measures by which their naturally obstinate character

may be overcome. To this very tediousness of character, which many diseases present, may be, in a great degree, ascribed the existence of the empiric: the patient, tired by the long existence of a malady which appears to him to baffle the physician's skill, seeks for aid from any quarter promising relief; and the physician, impatient for the result of a case, is too often apt to have recourse to empirical plans of treatment, throwing aside those which experience should have shown him were still worthy of further trial. In no class of diseases is this so true as in those affections which I am about to describe. Much has been done of late years for their diagnosis, but little for their treatment. The numerous remedial measures proposed are nearly all empirical, the stage of the disease, or the constitution of the patient, being but seldom taken into account; and as a necessary consequence, *eruptive diseases of the scalp afford a fair domain to the quack*.

My object, then, in the following essay, is to direct attention to eruptions occurring on the scalp, as a special class of diseases,—bearing a close resemblance to cutaneous eruptions of other parts of the body, so close as to justify for their designation the same generic names, yet sufficiently distinct to require for their diagnosis, and especially for their successful treatment, a specific description. The observations which I venture to lay before the profession are based on my personal experience in the wards of Jervis-street Hospital, in the large dispensary attached to that institution, and on the results of cases in private practice. I shall not enter into a detailed account of the history of this class of cutaneous diseases, nor of the authors who have written on the subject, unless so far as may be requisite to elucidate my own remarks.

The different varieties of eruptions which occur on the scalp are, with one exception, of a decidedly inflammatory character in their early stage. They are, therefore, naturally divisible into two groups, *inflammatory* and *non-inflammatory*. This division is, I think, especially valuable as an indication

of the principles which should be our guide in treatment; for although the inflammatory affections do, like inflammations occurring in every other part of the human frame, become chronic, and then lose much of their inflammatory character, it must be always borne in mind that they do not bear a stimulating plan of treatment, even in their most chronic stage, so freely as the disease which constitutes the second division; and that in no instance is the application of stimulants indicated in their early stage. This arrangement thus at once lays the foundation of a rational, in contradistinction to an empirical, plan of treating these affections.

The generic names which I employ are those to be found in Willan's Classification of Diseases of the Skin. They indicate with sufficient accuracy the distinctive characters of the eruptions, and by their adoption we insure simplicity in nomenclature, and avoid the confusion which arises from proposing new names for diseases. I use but one specific appellation for each genus, and this has reference to the seat of the affection, as distinguishing it from a similar eruption occurring on other parts of the body.

The classification which I propose may be arranged as follows:—

Eruptive Diseases of the Scalp.

INFLAMMATORY.	NON-INFLAMMATORY.
Herpes capitis.	Porrigio capitis.
Eczema capitis.	
Impetigo capitis.	
Pityriasis capitis.	

It will be seen that I exclude from this arrangement some diseases of the skin which are ordinarily described as occurring on the scalp. My reason for doing so is, that psoriasis, lepra, and ecthyma, the other eruptions which occur in this situation, are very rarely met with there, unless in connexion with their existence on the skin generally; and their presence on the scalp not requiring any special plan of treatment, they cannot

be looked upon as diseases peculiar to this portion of the cuticular surface.

By a still further analysis of this class of skin diseases, we find that the two first-named belong to the order *vesicles*, the third to *pustules*, the fourth to *scaly diseases*, and the fifth to *vegetable growths*.

I shall now proceed to describe individually each of the forms which constitute the first group, and then speak of their treatment collectively.

Herpes capitis.—The variety of herpes which is met with on the scalp differs somewhat in its characters from any species of that disease which occurs on other parts of the body. It bears most resemblance to *herpes circinnatus*, but differs from it in the very trifling development of the vesicles which appear at the commencement of the eruption, and in their assuming almost immediately the characters of a scaly disease. They thus agree with the description given by Cazenave, in his *Leçons sur les Maladies de la Peau*, of a variety of herpes which he proposes to term *herpes squamosus*, but which, when it occurs on the scalp, he names *herpes tonsurans*. By careful examination, however, the vesicular character of the eruption, and its course, are sufficiently well marked to authorize its being classed as a species of herpes.

Herpes capitis usually attacks children from the age of 3 to 12. It is very rare in early infancy, and I have never met with it after the age of puberty, except in one instance, in which it had commenced at the age of 13, and had lasted for over five years before I saw the case. It is but rarely witnessed in its first stage,—that of vesicle,—as it then produces but little annoyance, and advice is, consequently, not sought for until it becomes more developed. When seen, however, at its commencement, it presents the appearance of a small ring of minute vesicles, not more than an eighth of an inch in diameter, without any redness or other mark of inflam-

mation beyond a slight tingling,—not itching. These vesicles are attended with scarcely any discharge, soon drying up and desquamating; but as they dry up in the centre they spread from the circumference, and the diseased spots, in the course of a few days, attain the size of a shilling.

If we examine them in this stage, we find that the centre, the part where the eruption first appeared, is thickened, elevated above the surface of the surrounding scalp, and covered with fine scales, which are renewed rapidly on being removed. As the disease proceeds, the patches extend from their periphery, still retaining a perfectly circular shape, and, finally, after some weeks, attain the size of a crown-piece, which I have rarely seen them exceed, no matter how chronic the case may have been. Having attained this size, and ceased to spread, the entire of the diseased surface is thickened, elevated, and covered with fine, soft scales, which the least touch removes. Sometimes but one patch of herpes is found on the scalp, but more generally there are three, four, or more circles, distinct, and at some distance from each other: this, the advanced stage of the disease, is usually attended with much itching.

As the disease advances the hair assumes a very peculiar appearance, almost pathognomonic of this form of eruption of the scalp. In the early stage each hair appears to be slightly bent on itself, and turned against the grain, obstinately refusing to lie smooth; the roots are also somewhat matted together by the scaly crusts of the eruption. After some time it presents a diseased appearance, being twisted, broken, of a whitish colour, and readily falling out; so that bald patches begin to appear, over which are scattered small bundles of the altered hair, which has been described, not inaptly, as resembling tow. This condition of the hair has induced some writers to describe this affection as a disease not of the scalp, but of the hair itself. Thus Mr. Erasmus Wilson, one of the most recent English authors on diseases of the skin, has named it *trichonosis* (from $\theta\rho\iota\xi$, *capillus*, and $\nu\omicron\sigma\omicron\varsigma$, *morbus*) *furfuracea*.

The eruption does not in all cases assume the exact characters I have now described. In the early stage—when, however, it is rarely witnessed by the medical practitioner—its appearance always agrees with the description I have given, except that in some cases there is more inflammation than in others; but in the advanced stages it varies much, both as regards the amount of desquamation and the appearance of the elevated patches: it is this fact which has led to so much confusion in the diagnosis and nomenclature of the disease. Yet in the most chronic or complicated cases, the circular form of the eruption, and the peculiar condition of the hair, render its diagnosis easy to even the tolerably experienced eye.

Herpes capitis is the true ring-worm of the scalp.

The contagious nature of this eruption has been doubted by some, but I have seen too many instances of its direct communication from child to child, of *different* families, in which the argument of similarity of constitution and of dietetic arrangements could not avail, to have any doubt on the subject; and I look upon the contagiousness of ring-worm of the scalp as distinctly proven as that of small-pox. I do not mean to say that in the very young infant or the adult the disease will be produced by contact, for at either age it is but very rarely seen, as I have already remarked: but that contagion will give rise to it in children of the age at which it is likely to occur, and also, as in other contagious affections, that some individuals are more predisposed or more prone to its attacks than others. I need scarcely refer to the experience of most physicians as to the spread of this eruption in institutions where the youth of either sex are congregated together, or to the proofs we so frequently meet with, in private practice, of its propagation by contagion from wearing the cap or using the hair-brush of a child affected with the disease. I could relate many instances of both which occurred within my own knowledge, but prefer citing the following remarkable example from M. Cazenave.

“ The 29th of April, 1840, I was sent for by the president

of a college at Paris, to see, with the physician and surgeon of the establishment, a number of children affected with an eruption of the hairy scalp. I was informed by them that about the same period of the year before, six or eight children of one of the lesser colleges had been attacked with an eruption similar to that which I had now been sent for to see; that there had not been the least appearance of the disease until the arrival of a young pupil who laboured under the affection previously to his admission; they also remarked that the companions ('*voisins*') of this boy were the first affected; and, in fine, that the eruption was limited to the boys of the lesser college, with a single exception, which occurred in a brother of one of the boys affected, but who was an inmate of another college."(*a*)

Herpes capitis does not cause baldness; the altered hair falls off the diseased patches, which, when the scales disappear in the progress of cure, are thus left in a bald state; but the hair eventually grows on them again, thereby constituting an essential difference between this affection and alopecia. The disease, unless when seen and properly treated in its early stages, soon becomes chronic and obstinate, and loses its inflammatory character.

Eczema capitis.—This, like herpes, is a vesicular eruption; but it soon loses this character, and in its various stages presents so much diversity of appearance that its diagnosis is not always unattended with difficulty: in one of its forms it bears so close a resemblance to impetigo, the eruption next to be described, that by most authors a species has been recognised which they term *eczema impetigonoides*. With the object, however, of attaining simplicity by avoiding numerous subdivisions, I have thought it better to describe the different forms of the disease under one specific denomination.

(*a*) *Leçons sur les Maladies de la Peau*. 1846. Folio, p. 47.

The eruption of eczema on the scalp is preceded by heat, tingling, and itching, which are rapidly followed by the appearance of minute vesicles, crowded together in irregular-shaped patches, or scattered over a large surface. The interspaces between the vesicles and the whole of the scalp on which they are seated is red and inflamed; in most cases the vesicles are so minute as to be scarcely recognisable, or at least are not seen by the physician until they have burst and given exit to a copious exudation of a serous fluid by which the roots of the hair are accreted together. In the acute forms of the disease this serous exudation continues for a long time, and is a most troublesome symptom; but in the chronic forms—and some cases assume a chronic character almost from the first—it rapidly dries into furfuraceous scales, which are pushed forwards by the hairs as they grow.

The vesicles of eczema usually first appear behind the ear, close to the edge of the hairy scalp, from whence the disease spreads rapidly, very generally attacking the ear itself; in some cases the entire of the scalp will be covered with the eruption in a week or ten days, but in others the disease spreads very slowly.

With the progress of the affection, the appearance of the diseased surface varies much; sometimes it is scarcely, if at all, elevated above the healthy parts, and is only to be recognised by the watery exudation which keeps the hairs in a constantly moist state. In other cases the scalp is raw or excoriated, and secretes a thin, whitish pus, which dries into greyish brown scabs, presenting cracks or fissures, through which the inflamed surface is seen. In a third form of the disease the serous exudation dries rapidly into extremely thin membranaceous scales, which are readily removable by the slightest friction, but cause much itching; and a fourth variety is characterized by a repeated eruption of minute patches of vesicles—the patches rarely exceeding the size of a small bean—all over the scalp, which pass through the stages of eczema as witnessed on

other parts of the cuticular surface, and disappear in seven or eight days, but to be rapidly succeeded by a fresh outbreak of the disease.

The hair in eczema, no matter how long the disease may have existed, remains unaltered. When in the acute forms, attended with much inflammation, ulceration of the scalp occurs, the hair, of course, falls off, but in the progress of cure it grows again in a perfectly healthy state, except that in individuals past the age of puberty the new growth of hair is often grey.

Eczema capitis is not a contagious disease; its cause (and this is also true of the other eruptions which occur on the scalp) cannot be satisfactorily accounted for. They appear on the scrofulous and on the non-scrofulous child, on the healthy and on the delicate, on the ill-fed, ill-housed, deficiently clothed children of the poor, and on the highly-nurtured, well-housed, warmly-clad children of the rich; in short, the only cause we can plausibly assign for their outbreak is that scarcely understood one, *constitutional*. We know that in many families a peculiar predisposition to diseases of the skin exists, and this predisposition appears to be hereditary; the same is true of eruptions of the scalp. Their duration is undoubtedly promoted, though their first appearance is not satisfactorily proven to be caused, by want of cleanliness.

Impetigo capitis is a pustular disease; and the only one of this class which is met with on the scalp. Its occurrence in children is preceded, for a few days, by feverish symptoms, frequently attended with vomiting; the surface of the scalp is hot and painful, and the part about to be affected presents an erythematous blush. The eruption makes its appearance either in distinct pustules of a *psyrdracious* character, scattered over the head, or in groups thickly set on an inflamed base. In the former case each pustule is about the size of a small pea, both in circumference and elevation; and is attended with but little surrounding inflammation. On the second day of their

appearance, each pustule contains thick yellow matter at the summit, but it is soon matured, when it bursts, and gives exit to the contained pus, which rapidly dries into a greenish-yellow scab. This form of impetigo,—the *impetigo sparsa* of most writers,—rarely assumes a chronic character, when it has lasted for any time its continuance being kept up by an eruption of fresh pustules on other parts of the scalp; but it most generally passes into the second form.

The second form of the disease is, as I have said, characterized by the eruption occurring in groups of pustules; but the individual pustules also are different in character, being of the variety which have been termed *achores*. Their appearance is attended with more decided symptoms of inflammation, both general and local, and the heat and itching is in many cases so severe that children tear the scalp and prevent the disease from presenting the truly pustular character of the first stage. The eruption usually commences on the forehead, involving at the same time some of the hairy scalp; the inflamed patches vary in size and form in different cases; in some extending in their longest measurement not more than from half an inch to one or two inches, while in others the greater part of the scalp is involved from the very commencement: in nearly every instance the skin bordering on the scalp is more or less engaged in the disease, and it often appears at the same time on the ears or on some part of the face. The pustules are not so large as when they occur singly; their coats are apparently thinner, and the pus which they contain is not so consistent, and is of a richer yellow colour. They usually become confluent before they burst, and the resulting greenish-yellow (when chronic greenish-brown) scab, is consequently much more extensive. When the eruption has continued for any length of time, large quantities of bright yellow pus are secreted beneath the greenish crusts, which separate in cracks to give exit to the matter, exhibiting beneath the highly inflamed raw surface of the scalp from which the pus is secreted.

In either form of impetigo the hair is unaltered; it is usually matted together by the purulent secretion and the scabs, but it does not fall off or become changed in appearance even in the most chronic cases.

Impetigo capitis is not a contagious disease; it is met with at all ages, but most generally in early infancy, lasting for several years if not properly treated; it very rarely appears for the first time after the age of 9 or 10, but I have seen two instances in which the eruption occurred in advanced life: in both the disease was of the form first described.

In the chronic stage of this eruption of the scalp small abscesses very frequently form at the nape of the neck, close to the roots of the hair; and some of the chain of lymphatic glands, which lies behind the sterno-mastoid muscle, become enlarged, swollen, and tender, but they very rarely suppurate.

Pityriasis capitis is a squamous disease; though I have placed it amongst the inflammatory affections of the scalp, the inflammation with which it is attended is, from the first, of a chronic character; it would indeed seem to form an intermediate division between the inflammatory and non-inflammatory eruptions of this part of the dermis. Its appearance is not accompanied by any sign of constitutional or local disturbance, but soon after its eruption on the scalp it gives rise to much itching, without heat or redness of the surface. The disease consists in the secretion of numerous minute, papyraceous, dry scales, in most cases scattered over the entire of the head, without any sensible elevation of the surface, and perfectly free from moisture. I cannot describe the precise manner in which this eruption originates, as I have never seen it until the squamous secretion was fully developed, there being no symptoms to direct the patient's attention to it until then. The presence of the scales produces much itching, compelling the individual affected to scratch the head, by which the scales are readily detached in large quantity, in the state of a fine

powder or *dandriff*; their removal is rapidly succeeded by a further secretion.

If we examine the condition of the scalp in pityriasis capitis, the surface is found to be closely covered with the imbricated scales, with small intervals here and there; the skin of the unaffected parts presenting a smoother or more polished appearance than natural. On removing one of the scales we find that the spot on which it is seated is soft, and that another finer scale may be removed from it; and it is not until after the removal of several scales, each finer than the preceding, that we arrive at the reddened and inflamed surface of the scalp, which is somewhat depressed.

The chief annoyance which this eruption of the scalp causes is itching; the patient, in scratching himself to allay it, removes large quantities of dandriff; and in the child the irritation is often so great that the scalp is torn, becomes inflamed, eczematous vesicles appear, and the original affection becomes complicated with the latter disease.

Pityriasis is most commonly met with in infants at the breast, the frequency of its appearance decreasing with the advance of years towards puberty, at which age it is very rarely met with, but it again appears at the approach of old age. It thus seems to be most frequent when the head is least covered with hair, and it is also most generally seen in individuals whose hair is naturally thin. Were we to reason on this fact with reference to the causation of this form of eruption on the scalp, we might reasonably conclude that the scaly secretion was an effort of Nature to protect that portion of the surface when its proper covering was deficient in quantity.

In pityriasis capitis the hair remains unaltered.

The differential diagnosis of the four inflammatory eruptions of the scalp will, I think, be rendered most simple by an arrangement of their essential characters in the following tabular form:

HERPES CAPITIS.	ECZEMA CAPITIS.	IMPETIGO CAPITIS.	PITYRIASIS CAPITIS.
<p>A vesicular eruption. Appears in circular patches.</p> <p>Preceding or accompanying inflammation always slight.</p> <p>Discharge serous, small in quantity, lasting only for a few days.</p> <p>Secretion dries into fine, soft scales, which are readily detached by the slightest touch, but are again very quickly renewed.</p> <p>The hair on the diseased patches is bent, twisted, apparently broken, and whitish; as the disease becomes chronic, it falls out on the slightest touch, leaving bald patches, with scattered masses of diseased hair, resembling tow; but with the progress of cure the hair grows again.</p> <p>Highly contagious. Usually occurs in children from the age of 3 to 12.</p>	<p>A vesicular eruption. In irregularly-shaped patches, or scattered over a large surface of the scalp.</p> <p>Preceding or accompanying inflammation moderate; rarely very active.</p> <p>Discharge, in one form, at first serous, afterwards sero-purulent, very copious; in the other form, trifling, but more copious and lasts longer than in herpes.</p> <p>Secretion dries into either <i>brownish</i>-yellow scales, through which the discharge forces its way, or into furfuraceous scales.</p> <p>The hair is held together by the furfuraceous scales, or is kept in a constantly moist state by the discharge; but its texture and appearance are unaltered.</p> <p>Not contagious. Occurs at all ages, but most frequently in the earlier years of life.</p>	<p>A pustular eruption. Diffused in single pustules, or in closely aggregated confluent masses.</p> <p>Preceding and accompanying inflammation generally active.</p> <p>Discharge purulent; always very copious.</p> <p>The purulent discharge dries into large <i>greenish</i>-yellow crusts, by which the whole head, and even sometimes the forehead and part of the face, is in many cases covered, as if with a mask.</p> <p>The hair is matted together by the thick discharge and scales, but is otherwise unaltered.</p> <p>Not contagious. Met with in children of all ages, but very rarely in adult life. The confluent form of the disease is more common in early infancy; the scattered, after the third year.</p>	<p>A scaly eruption. Scattered over the entire of the scalp.</p> <p>No attendant inflammation, unless it be produced by some irritating cause; slight inflammation usually precedes the eruption.</p> <p>No discharge.</p> <p>The scales are minute, dry, papraceous, and imbricated, though scarcely, if at all, elevated over the surface of the scalp; readily separable in the form of a fine powder or dandriff.</p> <p>The hair is unaltered, but it falls out more easily than natural.</p> <p>Not contagious. Most generally occurs in infancy, and in the advanced periods of life; very rare in childhood, adolescence, and manhood.</p>

The swollen glands of the neck and abscesses of the scalp, though most frequently met with in impetigo, may occur in every form of eruption of the scalp; their occurrence is, therefore, of no value as diagnostic symptoms. Moreover, there does not seem to be any constitutional disturbance *peculiar* to the inflammatory eruptions of the scalp.

Of the four varieties now described, I have met with eczema the most frequently; next to it, impetigo; next, herpes; and pityriasis the least frequently.

The prognosis to be given in any of these eruptions depends more on the length of time which the disease may have lasted, than on the exact variety which is present: the longer they have existed, the more inveterate and obstinate they are, as also the more liable to relapse after cure. When seen early, and submitted to judicious treatment, they are generally cured in from a fortnight to three weeks, and sometimes in a much shorter space of time; but in old standing cases the cure is rarely accomplished in less than from two to three months. With reference to the peculiar form of eruption, I have found the prognosis as to curability to be as follows: 1st. the scattered form of impetigo; 2nd. pityriasis; 3rd. the moist form of eczema; 4th. confluent impetigo; 5th. herpes; and 6th. the dry form of eczema.

As respects the first group of eruptive diseases of the scalp, two principles must, I conceive, be laid down, to enable their treatment to be based on rational, and not on empirical, principles: first, that they are inflammatory, and secondly, that they are constitutional affections. That they are inflammatory is sufficiently proved by the preceding and attendant inflammation with which they are all accompanied, and by the character of the same eruptions when they occur on other parts of the cuticular surface. It is evident from what I have said, when describing their symptoms and diagnosis, that they are not all equally inflammatory, and also that the inflammatory character disappears much when they become chronic. That

they are constitutional diseases is proved chiefly by the great advantage derived from their treatment by the administration of internal alterative medicines.

It is, I am convinced, to the neglect of these two principles that the difficulty of treating scalp diseases, as so generally acknowledged, must be ascribed. For we find that some trust to external applications, others to internal remedies alone; and most practitioners use the most powerful stimulants to the scalp in every form and in every stage of its eruptions. Stimulating applications do unquestionably, in some instances, cure these diseases, when they become very chronic, and have, so to say, nearly worn themselves out; but the manner in which they do so is by exciting a fresh inflammation in the scalp, by which a new action is produced sufficient to change the condition which previously existed there. They, however, more frequently fail, and the existing disease is then much aggravated from their use; it is, moreover, only in the very chronic stage that they ever do prove beneficial, as the employment of even the most mildly stimulating applications proves highly injurious in the early stages of any of the eruptions of the first group.

One general rule which I have adopted in the treatment of every form of eruptive disease of the scalp, and from which, I think, I have derived much benefit, is, *never to shave off the hair*; I direct it to be cut *close* with a sharp pair of scissors, and to be kept cut as closely as possible while the least trace of the eruption remains. The mere operation of shaving the head produces much irritation, and the growth of the hair afterwards continues constantly to excite repeated attacks of inflammation, and thus interferes with the remedies employed. For the same reason I do not permit the use of a comb or hard brush, which are so generally used with the view of loosening and removing the crusts. The *softest* hair-brush may be used, but when the hair is kept cut sufficiently close there is no occasion even for it.

The local remedies which I am in the habit of employing are the carbonates of soda and potash, either made into an ointment with prepared lard, or in solution in distilled water or rose-water. I use them of various strengths, according to the form of the eruption, and the greater or less degree of attendant inflammation. The carbonate of potash, being of a somewhat more irritant character, is applicable only to those cases where the attendant inflammation is slight, as it generally is in pityriasis, in many cases of herpes, and in the more chronic forms of eczema; but the carbonate of soda is best suited for impetigo in all its stages, and for the acute and recent cases of the other eruptions. The quantity of either of the carbonates in the ointment varies from twenty grains to half a drachm to the ounce of prepared lard. As it has an unpleasant odour, in private practice I usually add three or four minims of the oil of lemon or oil of bergamot, which addition also makes it keep better; where, however, the inflammation is very active, even this small quantity of an essential oil would render it too stimulant: in all cases I commence with the weaker preparation. The ointment is applied three times daily, being lightly smeared over the eruption; it is washed off with the corresponding alkaline lotion every morning, previous to the first application for the day. In very inveterate cases, where the head is covered with thick, hard scales, a light poultice of linseed-meal should be first applied for twelve hours, the scalp is then to be covered with a piece of old linen, on which the ointment is spread, and an oil-silk cap laid over the linen; this is left on for twelve hours more, when the scales are readily removable by washing the head with the carbonate of soda lotion. A clean surface is thus procured, on which the ointment acts more readily.

The alkaline lotions are prepared by dissolving from half a drachm to a drachm of the carbonate of soda or potash in a pint of rose water or distilled water. During the whole course of treatment the head is washed, at least once daily, with

either of these lotions. They keep the scalp cleaner, and freer from scabs, than soap and water, which, however, I never permit to be used, as the irritant quality of soap tends much to retard the cure. In some cases, with which greasy applications disagree, but which we cannot ascertain except by trial, I use either of these lotions as the only external application; but then I order it to be applied five or six times daily.

In the chronic forms of any of this class of eruptions the application of a mild stimulant to the scalp becomes necessary, but more especially in cases of impetigo and eczema of long standing. The preparation which I have found most useful is a very dilute citrine ointment,—from half a drachm to a drachm of the officinal ointment to the ounce of prepared lard. This is applied only once daily, at bed-time, and washed off in the morning with the alkaline lotion, which is also used three or four times during the day.

In the treatment of the inflammatory division of eruptive diseases of the scalp, the alterative medicine that I employ is the yellow iodide of mercury (the incorrectly denominated proto-iodide of the London Pharmacopœia): I prescribe it in combination with hydrargyrum cum cretâ and aromatic powder. To a child six years old I give half a grain of the yellow iodide of mercury, two grains of hydrargyrum cum cretâ, and two grains of aromatic powder, every second morning; for an older child I order the same quantity every morning; and for a younger child only every third or fourth morning. Should the child, however, be not more than three years old, I order half the quantity to be administered twice in a week; for infants at the breast, I omit the iodide of mercury, and give either the hydrargyrum cum cretâ or the hydrargyrum cum magnesiâ: the latter preparation I usually prefer, as it is a more certain mild purgative than the former.

In all cases I keep the child strictly on milk diet during the entire of the treatment.

Such is an outline of the plan of treatment I have now

employed for more than six years in this obstinate class of diseases, with almost uniform success, both as regards rapidity and completeness of cure. Some cases, of course, prove more rebellious than others, but I have met very few which resisted for so long as three months the remedies I have mentioned, when carefully and perseveringly employed. Like other skin diseases, eruptions on the scalp are apt to return; I have, therefore, invariably made it a rule to continue the treatment for at least a fortnight or three weeks after the disease has been to all appearance completely cured: this, I need scarcely say, it is often difficult, if not impossible, to do with the children of the poor, our hospital and dispensary patients.

Before I proceed to describe the only remaining eruption of the scalp, I shall shortly relate a few cases in illustration of the preceding observations.

January 31, 1844, I was sent for to see Master O'B., aged two years, a fine boy, with a florid complexion, well-developed body and limbs, and rather fat. He has had an eruption on the scalp from the time he was nine months old, for which he has been ever since variously treated. It is a case of very aggravated impetigo, the whole head and forehead, down to the eye-brows, being covered with greenish-yellow scabs, through which a copious, rich yellow discharge exudes in various parts; of late it has been extending much, and the child's mother was afraid that it would soon cover the whole face. The hair is all matted together, the head is hot, and the tongue is very foul, although his bowels are freed regularly twice in the day; his appetite is good. A light linseed-meal poultice was applied all over the head and forehead, and left on for twelve hours; he was ordered three grains of the yellow iodide of mercury, twelve of hydrargyrum cum cretâ, and twelve of aromatic powder, in six powders; one to be taken twice a week. The next morning, the greenish crusts being quite soft, the hair was ordered to be cut as close as possible, and the scalp and forehead to be washed four times

daily with a lotion consisting of twenty grains of carbonate of soda dissolved in eight fluid ounces of rose water. In a week's time, the scalp being quite free from any tendency to heat of surface or inflammatory action, and the scabs having nearly disappeared, though the discharge was still very copious, the head was ordered to be smeared every night, at bed-time, with an ointment containing half a drachm of citrine ointment to the ounce of lard; the lotion and powders to be continued as before. This treatment was continued without any alteration, except that of increasing the strength of the ointment one-half in about three weeks, until the 2nd of April, when there was not the least trace of the eruption; the hair was then permitted to grow, and he was gradually allowed to get meat, at first only twice a week, for dinner: he had been kept all through strictly on milk diet. I have been attending this child within the last few weeks, and there has never been the least return of the disease since the above date, now more than four years.

This case is a good example of rapid and permanent cure of a very inveterate form of impetigo. Recent cases of the scattered variety of the eruption are often cured in from a week to ten days, as in the following instances:—

Michael Daly, a fine child, three years old, was brought to the dispensary of Jervis-street Hospital Feb. 3, 1848. His mother states that about four or five days ago he complained of his head being sore and itchy, and on examining it she found little boils, as she calls them, on several parts of the head. The entire scalp is now the seat of impetigo sparsa, the hair is matted together in various places by the crusts, and there is a good deal of discharge present. The hair was ordered to be cut close; the carbonate of soda wash—half a drachm to ten ounces of water—to be applied to the head repeatedly during the day; and a third of a grain of yellow iodide of mercury, with a grain and a half of hydrargyrum cum magnesiâ, to be taken every morning. The child was brought to the dispen-

sary quite well on the 11th, but the remedies were ordered to be continued for ten days longer. I have seen him on the 25th of May, up to which time he had no return of the disease.

James Keogh, aged 8, was brought to the hospital, May 2, 1848, with impetigo sparsa of three days' standing; treatment as above; well in ten days.

I have reports of numerous cases of impetigo which were treated thus at the dispensary of the hospital during the last six years, and which were witnessed by the pupils; but it is needless to occupy space with the reports of any more. In one case, that of James Donohoe, extensive ulceration of the scalp on the crown of the head followed the bursting of an abscess which was consequent on an aggravated and long persistent attack of impetigo; and after the eruption was cured by the ordinary treatment, the ulceration healed in about three weeks under the use of a lotion of sulphate of copper, three grains to the ounce, and the hair has since grown on the part.

I have rarely found eczema, even when seen in its earliest stage, get well so rapidly as impetigo, the mildest cases requiring from three weeks to a month, and the more aggravated from two to three months, for their cure. The following case was treated in hospital.

John Halpin, aged 9, was admitted into Jervis-street Hospital, October 19, 1847, affected with eczema of the whole scalp, the left ear being also engaged in the disease; the hair was matted together at the roots, but at its free extremity covered with dry furfuraceous scales. The disease was of twelve months' standing. The hair was ordered to be cut quite close, and a light linseed-meal poultice applied. The next day he was directed to take a powder containing half a grain of the yellow iodide of mercury, two grains of the hydrargyrum cum cretâ, and two of aromatic powder, every morning, and to have the carbonate of soda ointment applied to the scalp three times a day, and the head to be washed every morning with the carbonate of soda lotion. On November 8th, being nearly well,

he was made an out-patient, but, although he attended regularly at the dispensary, he was not completely cured until the 20th of December.

Cases of herpes and pityriasis are much less common than either impetigo or eczema; thus, for the last eight months that I have been on duty at Jervis-street Hospital, I have treated twenty-eight cases of eczema, twenty-six of impetigo, six of herpes, and two of pityriasis; but I meet with both these eruptions in a much larger proportion in private practice. The only additional observation that I have to make as to their treatment is, that they bear stimulants—the lotion and ointment of carbonate of potash, and the dilute citrine ointment—at a much earlier stage, and much more freely, than either of the other eruptions.

Porrigio capitis constitutes the second division of eruptive diseases of the scalp. It is essentially a non-inflammatory disease; for although it is in some instances attended with heat, inflammation, and itching of the scalp, these symptoms depend on the presence of minute pustules which sometimes accompany the eruption, but in most cases they do not occur. It cannot be classified in the artificial arrangement of diseases of the skin by Willan, or any of the more recent writers on these affections, inasmuch as it is unquestionably a vegetable growth, a view of its nature first promulgated by Schönlein in 1839(*a*), and by Gruby in 1841(*b*), and since authenticated by the investigations of Hughes Bennett(*c*), Corrigan(*d*), Müller(*e*), Lebert(*f*),

(*a*) Müller's *Archiv. für Anatomie und Physiologie*, p. 82. 1839.

(*b*) *Comptes Rendus hebdomadaires des Seances de l'Academie des Sciences*, tom. xiii. pp. 32, 309. 1841.

(*c*) Transactions of the Royal Society of Edinburgh, vol. xv. p. 277; Edinburgh Monthly Journal for June, 1842; and Northern Journal of Medicine, Sept., 1845.

(*d*) Dublin Hospital Gazette, vol. ii. p. 1.

(*e*) *Archiv. für Anatomie und Physiologie*, 1842, p. 201.

(*f*) *Physiologie Pathologique*, tom. ii. p. 477, p. 22. 1845.

Remak(*a*), Vogel(*b*), Robin(*c*), and others. Its vegetable nature has been denied by Erasmus Wilson, the most recent English writer on the disease; but I have satisfied myself of the correctness of the conclusions arrived at in the investigations above referred to, by a personal examination of the diseased product in two instances with a powerful microscope. I at first failed in recognising the peculiar structure of the fungus, as figured by Bennett, and more recently by Robin, but this arose from using too low a power for the purpose, as Robin's illustrations were made with a microscope which magnified 500 times linear, and the power which I at first used was only 300; but on using a magnifier of 450, the eye-piece being of a low power, while the object-glass was a powerful achromatic, by which means a sufficient power was obtained without sacrifice of light, I was enabled without any difficulty to verify the correctness of his drawings.

Porrigio capitis, the true tinea or scald head, is a rather infrequent disease, occurring at all ages, but most generally in childhood, from the age of 3 to 12; I have, however, seen one instance of it in an infant only eight weeks old: the oldest person in whom I have met with it was the young man Kiernan, whose case I shall by-and-by give in full.

Porrigio, in its first stage, does not give rise to either heat of scalp or itching, and, consequently, is very rarely noticed until it is fully developed. It usually commences on the forehead, at the edge of the hairy scalp, but it spreads rapidly over the head, soon involving nearly the entire surface, the healthy patches which are left between the diseased spots being but very few, and small in extent. The eruption is also

(*a*) *Diagnostische und Pathogenische Untersuchungen*, p. 193, figs. 5 and 6. 1845.

(*b*) *Anatomie Pathologique générale*, traduit par A. J. L. Jourdan, p. 391. 1847.

(*c*) *Des Vegetaux, qui croissent sur l'Homme et sur les Animaux Vivans*. Par M. Ch. Robin. Paris. 1847.

met with on various parts of the body, the trunk, or extremities; but I have very rarely seen it there except when it existed at the same time on the scalp.

The appearance of this eruption is so peculiar, and so distinct from all the other eruptive diseases of the scalp, that it cannot possibly be mistaken for any of them. It first appears in the form of small, yellow, dry spots, about the size of a pin's head, of a bright yellow colour, seated on the surface of the skin, which is depressed slightly by them; each spot is distinct, hemispherical, slightly concave, or cup-shaped, on its free surface, and convex beneath, where it is adherent to the skin. On removing the small, diseased mass, that portion of the scalp on which it was seated is found to be somewhat depressed, smooth, and shining. A single crust of the disease, or *favus*,—as it has been termed, from its honeycomb appearance,—is often traversed by one, and sometimes by two hairs, which appear to grow, as it were, from the very centre, or most depressed portion; this has given rise to the notion that the disease is one of the bulbs of the hair, but the fact of its appearance on other parts of the body which are quite free from hair is a sufficient refutation of this opinion.

The eruption spreads by additions to the outer edge or circumference of each crust, which thus retains its hemispherical character, until it attains a diameter of two or three lines, or sometimes more. In a case which I have had recently under my care in hospital, some of the favi which were seated on the back of the trunk were fully half an inch in diameter; on the head, however, they rarely exceed the size above-mentioned. The adjacent favi, as they increase, unite with each other, and form large, irregularly-shaped masses, in which the original circular form of the individual crust is lost; the centre also of each is changed in appearance, and, instead of the cup-shaped depression, the entire surface is covered with alternate elevations and depressions, or, so to speak, ridges and furrows, concentrically arranged. The eruption thus increasing, the whole of the scalp,

often, too, the forehead, the neck, and parts of the trunk, become encased in one large, yellow crust, at the edges of which some favi, of the peculiar characteristic appearance, are invariably to be seen.

The crusts of porrigo are of a pale, sulphur-yellow colour; they are hard and dry, and break with a short fracture, exhibiting within a mealy powder, of a paler yellow than the external surface. They may generally be removed with facility from the scalp, but they bring away with them a thin layer of epidermis, which is firmly adherent to their under surface; through which small projections may be seen with a moderate lens, sometimes with the naked eye. These projections, or processes, pass into the dermis beneath, and when the crusts are torn forcibly away, blood issues through the small orifices into which they were inserted. From the very commencement of the eruption of porrigo the hair becomes altered; much of it falls out, and the straggling hairs that remain are thin, broken, weak, whitish, and readily removable with the crusts of the disease, in which they are firmly imbedded. When this affection has continued for any length of time, bald patches are left after cure, on which the hair does not again grow; and even where it has been cured at an earlier stage, the hair never regains its proper character, being weak, thin, and of a pale, whitish-yellow colour.

As the disease advances, much irritation of the scalp is produced; small pustules form here and there in spots as yet unaffected with the eruption; the tingling and heat are so unbearable as to compel the patient to tear the surface with his nails, even to such a degree as to cause ulceration; innumerable pediculi are engendered; the favus crusts emit an abominable odour, resembling that of mice; and a copious offensive discharge is secreted by the pustules and ulcerated spots: in short, an individual affected with this disease in its aggravated form becomes a loathsome and disgusting object.

I have already referred to the vegetable nature of this

eruption; it is in the spongy, friable contents of the favus that its characters are best seen. "Reduced to powder, and placed under the microscope, it presents," says Robin, "a mixture—1. of tortuous, branching tubes, without partitions, empty, or containing a few molecular granules (*mycelium*); 2. straight or crooked, but not tortuous tubes, sometimes, but rarely, branched, containing granules, or small, rounded cellules, or elongated cellules, placed end to end, so as to represent partitioned tubes, with or without jointed articulations (*receptacles, or sporangia, in various states of development?*); 3. finally, *sporules*, free, or united into bead-like strings. The mycelium is very abundant near the inner surface of the external layer, to which it adheres. The spongy, friable mass of the centre of each favus is principally formed of the sporules and the different tubes containing mycelium already described (*sporangia, or receptacles?*). We often find mixed with them *mycelium* tubes, but in small quantity. All these elements pass insensibly into each other: empty tubes (*mycelium*); tubes containing small, round corpuscles; tubes with corpuscles as large as the smaller sporules; sporules placed end to end, so as to resemble a hollow partitioned cylinder, with a tendency to separate at the joints; and free sporules. Bennett has given a good drawing of this arrangement."(*a*) M. Robin gives a minute description of the various parts of which this fungus is composed, as well as faithful and well-executed illustrations of this vegetable parasite, for which I must refer to his excellent essay. I shall only add, that he adopts the nomenclature of Remak, who has termed it "*Achorion Schonleinii*." The botanical characters of the plant are appended in a note(*b*).

(*a*) *Op. cit.* p. 8.

(*b*) "*ACHORION SCHONLEINII. Remak. Orbiculare, flavum, coriaceum, cuti humanæ presertim capitis insidens; rhizopodion molle, pellucidum, floccosum, floccis tenuissimis vix articulatis, ramosissimis, anastomoticeis (?)*. Mycelium floccis crassioribus subramosis, distincti articulatis, articulis inæ-

Porrigio capitis is a contagious disease, the vegetable being propagated by the *mycelia*. Its contagious character has been denied by many, on the ground of the rarity of the disease, and the failure to produce it by inoculation, as tried by Gruby and others; the former of whom only produced the disease once out of seventy-six trials on vegetables, and not at all on animals. But Remak succeeded in inoculating his own arm in August, 1842(a); and Bennett, who had previously failed in his own person after repeated trials, succeeded completely in 1845, in producing the disease in one of his class by inoculation and close contact of the favous crusts, obtained from the head of a boy at that time in the Royal Infirmary. An account of his experiment, and also of Remak's, will be found in the Northern Journal of Medicine for September, 1845, p. 202. Now in all these trials to generate the plant, one important fact connected with the natural history of parasitical fungi has been overlooked by all, namely, *that they require for their growth a peculiar soil*; thus we find one genus is only found on snow, another on cheese, another on yeast, different varieties on different decaying vegetable matters, and individual genera and species on various living animals and plants; nay, even different sorts on different parts of the same animal. This holds true with the Achorion Schonleinii; it requires for its reproduction to be planted in a peculiar soil, that is, on an individual whose system is in a peculiar cachectic condition; and until it is ascertained what this exact constitution is, a single instance of its propagation by contact—and such instances are not uncommon—must be held as sufficient proof of its contagious character.

Some have held that this eruption occurs in scrofulous persons only; others, that it is an hereditary disease; but neither statements are consistent with the observation of the cases

qualibus, irregularibus, in sporidia abeuntibus; sporidia rotunda, ovalia vel irregularia, in uno vel pluribus lateribus germinantia.”

(a) *Medicinische Zeitung*, for 1842.

which I have seen. It appears to have some connexion with, though I cannot say that it is *caused* by, poverty, filth, wretchedness, and a weak development of the mental faculties. Unquestionably where the disease has long existed, the mind is weak, and the countenance presents a somewhat idiotic expression.

I have spoken so fully of the characters and symptoms of porrigo, and it differs so completely from the other eruptive diseases of the scalp, that I do not think any further observations are required on its *diagnosis*. When the affection has become chronic, it is usually complicated with impetiginous pustules, eczematous scales, and pityriasis.

Porrigo capitis is the most obstinate of the eruptive diseases of the scalp, and cases of it are recorded as having resisted the most varied treatment for years; indeed, by many physicians it is believed to be altogether incurable. Our prognosis, therefore, must be always less favourable as regards the duration of this affection, than when any of the other forms of eruption is present. The experience, however, which I have had, enables me to state, that, although an obstinate disease, it is a curable one, and one which, when duly attended to, may be cured in a much shorter space of time than is generally believed.

The plan of treatment which I have found effectual in porrigo is both constitutional and local. The constitutional remedy which I use is the iodide of arsenic, a powerful alterative, and an active remedy, but one which may be given with the greatest safety to the youngest child, its effects being, of course, duly watched. The dose of this preparation is, for an adult, from one-tenth to one-fourth of a grain, very gradually increased; for a child six years old, one-fifteenth of a grain; and for a younger child, from one-eighteenth to one-twentieth of a grain. It is best given to adults in the form of a pill, made with dry manna, and a little mucilage; to a child it is best administered in the form of powder, its minute division being perfected by means of a little white sugar or aromatic

powder. When the system is saturated with this medicine, we usually find that some constitutional symptoms, such as acute headach, dryness of the throat, &c., are manifested; but in some cases I have given it in full doses for many weeks without any manifestation of its effects, further than those produced on the disease for which it was administered. When, however, it gives rise to the symptoms above mentioned, its use should be intermitted for some days, and an active purgative administered.

The following is an outline of the local treatment: the hair is to be cut, *not shaved*, as closely as possible, and a large linseed-meal poultice applied and kept on for twelve hours, so as to soften the crusts. As soon as the poultice is removed, the head is well washed with the stronger carbonate of potash lotion, and slightly brushed with a soft hair-brush or roll of lint; the scalp is then covered with the carbonate of potash ointment spread on lint, and over it a closely-fitting oil-silk cap is placed: the ointment is renewed twice daily. By the use of these applications the crusts of the eruption are generally completely removed in from two to three days. The carbonate of potash ointment is at the expiration of this time replaced by one containing the iodide of lead, in the proportion of half a drachm of the iodide to an ounce of prepared lard; the head is to be still washed every morning with the carbonate of potash lotion. In some cases it will be found that the iodide of lead ointment excites a certain degree of inflammation of the surface of the scalp after it has been used for some days; when such occurs it should not be applied for a day or two, and the lotion alone employed three or four times daily. After this first attack of inflammation disappears, I have not seen it again recur, although the use of the ointment had been persisted in for months. The strength of this ointment should be increased after a fortnight; if the disease again appear, even to double that above indicated. I have only lately employed the oil-silk cap, but its use appears to be attended with the greatest benefit. The ad-

vantage derived from its employment is twofold: in the first stage of treatment, by keeping the hard and firmly-planted crusts of the disease in a constant atmosphere of warm moisture, it softens, and thus renders them more easily removable; and in the after-treatment the mucedinous vegetable being retained by it in the closest contact with the iodide of lead and the emanations arising therefrom, is more certainly destroyed, and its reproduction prevented.

After continuing this treatment for at least three weeks or a month, all external applications should be stopped, and the hair allowed to grow, so as to ascertain if the fungus will be reproduced; for it often lies dormant, and suddenly shoots forth, increasing rapidly when no longer subject to the action of the iodide of lead. Should it again return, the local applications must be had recourse to as before, immediately on its appearance. We should continue the administration of the iodide of arsenic until we are quite satisfied that the cure is complete.

The rational principles on which I think this plan of treating porrigo capitis proves successful, and which first led me to its adoption, are: "*That it is a vegetable production, which grows and is reproduced on the cuticular surface of individuals whose system is in a peculiar cachectic state, and, consequently, that it is a constitutional affection.*" The object, then, is, to destroy the vitality of the fungus, and, by altering the nature of the soil on which it flourished, to prevent its reproduction. It is with the first view that I use the iodide of lead as a local application, and to fulfil the second indication that I administer internally the iodide of arsenic. Numerous metallic salts are, it is well known, and has been experimentally proved, poisonous to vegetables; but the inferior classes of vegetables, like the lower classes of animals, have a much more persistent vitality than those placed higher in the scale. So numerous were the local applications that had been employed, without success, in the treatment of porrigo, that but few were left

for me to try. Corrosive sublimate, as used by Dr. Corrigan(a), seemed to have proved the most successful of any, but the danger of its application to an extensive diseased surface for any length of time, from the constitutional symptoms which it must be so apt to produce, was to me a sufficient contra-indication to its employment. Iodide of sulphur had been very generally used on the Continent, with little advantage; but I am not aware that any person had previously employed the iodide of lead.

My reason for administering the iodide of arsenic internally, in preference to other alteratives, was, that I had seen it productive of the best effects in other cuticular diseases, in which the constitution was much engaged, especially in inveterate cases of psoriasis. I also found that it combined the effects of a tonic and alterative, the class of remedy indicated in this affection, and that its use, even when continued for a lengthened period, was unattended with danger. I restrict the patients to a purely milk diet, because, as I have already mentioned, when speaking of the inflammatory eruptions of the scalp, I found it useful in their successful treatment. I shall now conclude with a short account of a few cases in illustration of the effects of these remedies.

The following case was reported by Mr. J. B. Watson. Owen Kiernan, aged 18, was admitted into Jervis-street Hospital, May 23, 1846, affected with a copious eruption on the scalp. He states that it first appeared about three years and a half ago, when he took it from his brother, who was older than himself, and who laboured under the disease for years. At first he thinks that there used to be some matter on his head with the pimples, and that it caused him much itching and annoyance, his hair falling out readily; but he is quite positive that for the last two years it has been quite dry and powdery. At present his health seems good, but he has a foolish appearance,

(a) *Op. cit.* p. 4.

and is evidently somewhat silly. The top of his head is quite devoid of hair, of a clear white colour, smooth and shining; with rather large-sized opaque yellowish scales scattered over it at considerable intervals. On the temples and back of the head the hair is still remaining, but it is thin, whitish, broken, and like tow; it is on these parts that the disease exhibits itself chiefly; appearing in the form of a number of *saucer-shaped* scabs, sometimes separate, but mostly confluent, forming crusts of irregular shape in some places, and scattered pretty thickly over the intervening spaces. Each scab is nearly circular, dry, raised at the edges, concave at the centre, and pierced with usually a single hair, but sometimes a tuft of hairs, which it firmly encircles. They are of a pale sulphur-yellow colour, and show a tendency to crumble into a deeper-coloured yellow powder. There seems to be no inflammation around the bases of the scabs, or in the subjacent tissues, but the entire scalp is covered with pediculi and exhales an abominable odour. He has been repeatedly subjected to various treatment, but without the least benefit.

The day of his admission a linseed-meal poultice was applied to his head; and the next morning it was ordered to be washed with the carbonate of potash wash, and the following mixture was prescribed for him: bicarbonate of soda, two drachms; simple syrup, four ounces: dissolve. A tea-spoonful to be taken three times a day in a glass of water. To have milk diet.

May 28. He was ordered two grains of the iodide of arsenic, to be made into twenty pills with the aid of hard manna and mucilage, of which one was to be taken three times a day; and an ointment composed of half a drachm of the iodide of lead, six drachms of prepared lard, and two of white wax; with which the head was directed to be smeared three times daily; the carbonate of potash lotion to be still used every morning. On the 23rd of June the carbonate of soda lotion was substituted for that of the carbonate of potash, and the ointment was

directed to be stopped; and on the 26th of June, there being no appearance of any return of the disease, he was made an out-patient. This young man presented himself at the dispensary of the hospital in May, 1847, nearly twelve months afterwards, up to which time there had been no return of the disease.

Another case, which I attended much about the same time in private practice, a child eight years old, in the middle rank of life, was treated precisely as Kiernan, but was not cured for more than three months, a relapse having occurred at the end of the second month, which I ascribed to the child being allowed to indulge too soon in animal food.

The following is an example of the very inveterate character which porrigo usually presents. I regret much that, at the time I was treating it, I was not aware of the benefits derivable from the use of the oil-silk cap; as had it been employed I feel confident the cure would not only have been permanent, but more rapid.

Catherine Molloy, aged three and a half years, was admitted into Jervis-street Hospital, October 9, 1847. She is a full child, with a heavy, stupid expression. The entire of her head is thickly covered with large yellow crusts of porrigo, small distinct favi being scattered over the forehead and neck. The disease is also present on the back, extending from the tip of the right shoulder to the last rib, and from the axilla to the vertebræ, but not passing the median line. In this latter situation some of the favi are fully an inch in diameter, but for the most part they form a large crustaceous mass of a bright yellow colour: there are also some spots on the arms and other parts of the body. The whole of her person emits an exceedingly offensive odour, and she is covered with pediculi. The hair on those parts of the scalp to which the disease has not yet spread is of a dark brown colour, and matted together by the discharge from numerous impetiginous pustules, which are thickly scattered on them.

Her mother, who is one of the lowest class of beggars, has one other child, an infant at the breast; she states that this little girl has been affected with the disease since she was a few months old; the infant has some spots of it on the head, and she herself also has numerous crusts of the eruption on her head and neck. She states that both she and the infant took it from the elder child, the infant first, herself afterwards from the infant.

The child was first cleansed as well as possible in a warm bath, and the pediculi destroyed with mercurial ointment. The hair was then cut close and the treatment I have above described employed, except that the iodide of lead ointment was used much weaker (fifteen grains to the ounce); and as I was afraid to give the iodide of arsenic to so young a child, the yellow iodide of mercury was substituted for it. On the 20th of October the strength of the ointment was increased, and on the 21st the iodide of arsenic was prescribed in the dose of a twenty-fourth of a grain every morning. On November 5 the eruption on the trunk was nearly well, and that on the head much better. The strength of the iodide of lead ointment was increased to half a drachm to the ounce, and the iodide of arsenic was prescribed in doses of the eighteenth of a grain daily.

December 29. There was not the least trace of the eruption on the trunk, but a fresh outbreak of it had occurred on the scalp, which a few days previously was nearly well; an ointment was ordered to be applied to it, containing a drachm of the iodide of lead to the ounce of lard; and the twelfth of a grain of the iodide of arsenic directed to be taken every morning. On the 24th of January she was so well that the ointment was stopped and the carbonate of soda wash ordered to be used four times daily. The disease, however, again broke out on the head, but not at all on the trunk, early in February; and my term of attendance at the hospital having expired the end of that month, I lost sight of the case, which was dismissed from hospital immediately afterwards by my colleague.

This case is especially interesting, as showing the safety with which iodide of arsenic may be given to a very young child; during the time that its use was continued, nearly four months, I had only to intermit its use twice in consequence of its causing headach, which was readily removed by a mild purgative. The repeated outbreaks of the eruption I ascribe to the complete impossibility of keeping the child strictly on milk diet; being so young, she was made a pet of by the other patients in the ward, who were constantly giving her meat: this I was told by the nurse, and it was proved by the condition which the child acquired. I may remark here that this is the greatest difficulty I find in treating eruptive diseases of the scalp in private practice; parents are so much afraid of their children not growing strong if they are altogether debarred the use of animal food. The strict adherence to milk diet, however, I look on as an essential part of the plan of treatment I have laid down.

The next and last case which I shall narrate, though still in hospital (June 5, 1848), is, I am quite confident, completely cured. I am chiefly anxious to introduce it here, because it is the first case of porrigo in which I have used the oil-silk cap, and its progress to amendment has been much more rapid than any case that I have hitherto treated. It is reported by Mr. William Moore.

J. Maginn, aged 8, a fine healthy-looking boy, was admitted into Jervis-street Hospital, May 15, 1848. He states that about three years since some small spots appeared on the back part of his head, which gradually spread in every direction until nearly the entire of the scalp was covered. It now presents the characteristic appearance of porrigo, a large bright yellow crust enveloping the head and spreading down the left cheek in front of the ear; the hair is thin, scattered, broken, whitish, and enveloped in the favous crusts. There are also some spots of the eruption on the back and on the right leg. The head is covered with pediculi, and emits a disagreeable

mousy odour. He states that he contracted the disease from putting on the cap of a schoolfellow who had a sore head. He has been variously treated without the least benefit.

On admission the hair was cut close, and a large linseed-meal poultice applied over the head. Next morning he was ordered an ointment, containing twenty grains of the iodide of lead to an ounce of lard, to be spread on lint and applied over the entire of the head, which was to be then covered with a closely fitting oil-silk cap. The head was also ordered to be washed every morning with the carbonate of potash lotion, half a drachm to twelve ounces of water. For internal administration the following powders were prescribed: iodide of arsenic, a grain; hydrargyrum cum cretâ, thirty grains; aromatic powder, thirty grains; to be divided into fifteen powders, one to be taken three times a day. To be kept strictly on milk diet.

June 4. The eruption has been now for some days completely eradicated, both on the head and body; the ointment was ordered to be stopped and the hair to be allowed to grow, but the powders and lotion to be continued for another week.

ART. III.—*An Outline of the History of Pharmacy in Ireland.*

By WILLIAM D. MOORE, M. B., Licentiate of the Royal College of Surgeons, Edinburgh, and of Apothecaries' Hall, Dublin(a).

CIRCUMSTANCES having a short time since directed my attention to the early history of pharmacy in Ireland, I was fortunate enough to discover some old and apparently forgotten documents which afford so much information on the subject that I am induced to think a brief sketch of the facts deducible from them may not be uninteresting. Before, however, entering on the more immediate subject of this paper, I shall

(a) I am happy to acknowledge my obligation to Dr. Aquilla Smith for much valuable assistance in the compilation of this Paper.

endeavour briefly to collect from various writers a few of the most striking features of the origin and progress of the apothecary profession in other countries, as a means of comparison with that of our own.

It may be considered a universal law, that in countries where civilization is imperfect the practice of medicine is simple: the performance of a few surgical operations, and the exhibition of a few indigenous plants, constitute, in the infancy of nations, the entire practice of the healing art. These plants being easily collected, their preparation requiring little skill, there exists no need of the apothecary(*a*); the prescriber either prepares and administers his medicines himself, or they are prepared under his superintendence by servants or other uneducated persons. So it was in ancient Greece and Rome. The *ιατρος* of the Greeks corresponded nearly to what we should term the general practitioner. The Roman physicians likewise prepared the medicines prescribed by themselves, but employed others to collect the herbs of which the *materia medica* then almost exclusively consisted. Many of these herb-dealers soon encroached on the business of their employers, by selling compounded medicines; and Pliny even reproaches the physicians of his day for purchasing their medicines from the *Seplasiarii*, without knowing

(*a*) In the English translation of the oldest and most authentic history extant, the word “apothecary” occurs in Exodus, xxx. 25 and 35; it also occurs in Ecclesiastes, x. 1; and in Ecclesiasticus, xxxviii. 8, and xlix. 1. The word “physician” occurs four times in the Old Testament. I am indebted to the kindness of a learned friend for the following remarks on this subject:

“The original word, translated ‘apothecary,’ in the Hebrew passages referred to, is the same in all, and means properly a person who compounds perfumes or ointments, by mixing different kinds of aromatic products, so that the term corresponds more nearly to our perfumer than apothecary.

“The Septuagint render it by *μυρεψός*, which is also the word used in the two passages of Ecclesiasticus.

“The word translated ‘physician’ denotes, according to its etymology, one who *stitches up a wound*, and therefore approaches nearer to our surgeon than physician.”

of what they were composed, instead of making them up themselves as formerly. These herb-dealers had, however, but little resemblance to our apothecaries(*a*).

From Pliny's statement it would appear that it was long before regularly educated physicians obtained a footing in Rome(*b*). The practice of medicine was, probably, for 600 years in the hands of quacks and casual practitioners. This was partly owing to the simple and active life led by the Romans. "A science, the offspring of luxury and of depravity, with difficulty found access to a nation, all whose members, from the chiefs to the lowest in the state, were warriors, endured to fatigue, or hardy cultivators of the soil."(*c*) "But as the relations of the Romans with the Greeks became multiplied, and as luxury progressed among the former, physicians were seen to establish themselves in the capital of the world(*d*). The Greek physicians who first settled there were, for the most part, proprietors of baths; and many of these adventurers were slaves whom their masters, incapable at first of appreciating the advantages of science, and afterwards enervated by the luxury of the Greeks, sold or set free, after having presented them with considerable gifts in return for benefits received from them. These freedmen established shops, which the Romans called *medicinæ*, in which they sold medicines and profitably exercised their talents. But other physicians, who came to Rome under more favourable circumstances, enjoyed advantages and privileges which an art so noble as medicine is entitled to exact from all civilized nations; and when the Romans

(*a*) See Beckman's *History of Inventions*, Johnson's translation, vol. ii. p. 122, *et seq.*; Pliny, lib. xxxiv. cap. 11.

(*b*) Pliny, lib. xxix. cap. 1. "Ceus vero non millia gentium sine medicis degant, nec tamen sine medicinâ, sicut populus Romanus ultra sexcentimum annum, nec ipse in accipiendis artibus lentus."

(*c*) Sprengel, *Histoire de la Médecine, traduite de l'Allemand par Jourdan*, vol. i. p. 176.

(*d*) Sprengel, *Op. cit.*, p. 189.

expelled the Greeks from Italy, the law which banished them excepted by name those who followed the profession of medicine.”(a)

The establishment of the Alexandrian school, and the cultivation of science at that seat of learning, after some time led to the division of medicine into distinct professions; accordingly we find it described by Celsus, who lived about the time of Augustus or Tiberius, as consisting of the departments of dietetics, pharmacy, and surgery. “ These terms did not, however, possess precisely the same signification as in modern times. Dietetics comprehended not the regulation of diet alone, but every circumstance connected with the general health or management of the patient, and corresponded very nearly to the *medicus*, or physician, of later times.”(b) The second included with the composition of medicines the performance of many of the operations of surgery; and to the third was allotted the treatment of surgical diseases, many of the operations being committed to the professors of the second branch. This three-fold division seems to have continued, for the most part, until the decline and fall of the Roman empire(c).

It is, however, to the Arabs that chemistry and pharmacy were, at a subsequent period, most indebted. The former had been cultivated by the philosophers of Alexandria, solely in reference to the transmutation of the metals. The Arabs had a particular taste for it, and early applied themselves to its study; for their first chemist, commonly known by the name of Geber, lived in the eighth century. In his work on alchemy mention is made of some mercurial preparations, such as corrosive sublimate and red precipitate; and also nitric acid, nitromuriatic acid, nitrate of silver, and many other chemical pre-

(a) Sprengel, *Op. cit.*, p. 190.

(b) History of Medicine, Cyclopædia of Practical Medicine, p. xv.

(c) Good’s History of Medicine, so far as it relates to the Profession of the Apothecary, from the earliest Accounts to the present Period. Second Edition. London, 1796. Page 62.

parations. Other Arabian philosophers and physicians were also engaged in the study of chemistry, particularly as it relates to pharmacy(*a*).

Mesue, who died in the ninth century was the son of an apothecary, and bred under Gabriel, the son of Backtishua, and by him preferred to the inspection of the hospital(*b*). He was a Nestorian Christian, the best scholar and physician of his age, and in great favour with the several caliphs(*c*).

In fact the Mohammedans cultivated pharmacy with much success, and almost entirely changed its aspect. They invented the names alcohol, "*alkohal*;" julep, "*djousab*," which word in Persian signifies "rose water;" syrup, "*schirab*;" naphtha, "*nefth*;" camphor, "*kafour*;" and many others still in use. They also appear to have introduced the use of formulæ, sanctioned by the government, for the preparation of medicines. In the latter part of the ninth century appeared, under the title of "Krabadin," the first dispensatory ever published. That of Abou'l Hassan-Hebatollah-Ebno' Talmid, bishop and physician of the Caliph of Bagdad, enjoyed in the twelfth century a great celebrity, and was observed by the Arabian apothecaries. The latter were under the immediate superintendence of the government, who took especial care that medicines were not adulterated, nor sold at too high a price. The General Afschin visited in person the pharmacies of his armies, to ascertain if they contained all the medicines mentioned in his dispensatories(*d*).

Avenzoar, who flourished in the eleventh century, applied

(*a*) Sprengel, *Op. cit.*, vol. ii. p. 263.

(*b*) Hospitals had been established by ecclesiastics in the sixth century, but in the middle of the eighth the caliphs opened at Bagdad the first hospitals and public pharmacies intended to facilitate the study of medicine. So great was the celebrity of Bagdad at one time that it contained 6000 students.—*Sprengel*.

(*c*) Freind's *History of Physic*, vol. ii. p. 38.

(*d*) Sprengel, *Op. cit.*, vol. ii. p. 264.

himself to pharmacy, and, as he tells us, “took great delight in studying how to make syrups and electuaries, and had a strong desire to know the operations of medicines by experience, the way of extracting the virtues of them, and the manner of compounding one with another.”(a) He was not only versed in physic and pharmacy, but in surgery also. From his writings, however, it is plain that these were then separate professions, for he makes excuses for himself that, contrary to the custom of his country and the example of his father, he had applied himself to the study of the two latter, which, about the ninth century, had begun to rank much below physic, and were, in his time, so little esteemed by the physicians (the *Medici Honorati et Nobiles*) that they thought it below their character to understand them; and they, therefore, left all manual operations, such as bleeding, couching of cataracts, application of caustics, &c., as well as the composition of medicines, to their servants, the *servitores* and *ministri*(b).

In addition to the chemical preparations we have alluded to, the Arabians added to the list of remedies many vegetable products of the southern and eastern countries of Asia; for example, rhubarb, tamarinds, cassia, manna, senna, camphor, various gums and resins, and a number of aromatics, which were brought from Persia, India, and the Oriental Isles(c). They also first introduced the use of gold and silver leaf in medicine, and were the first to prepare syrups with sugar instead of honey, as used by the Greeks. They had also many forms for pills and electuaries(d).

By the settling of the Moors in Spain, and the intercourse which they and other Arabians had with Italy, Arabian medicine as well as other branches of learning were introduced into Europe; and it is probable that so early as the middle of

(a) Freind, vol. ii. p. 101.

(b) Freind, vol. ii. p. 111.

(c) History of Medicine, Cyclopædia of Practical Medicine, p. xxxiv.

(d) Freind, vol. ii. p. 206.

the seventh century there were Hebrew, Arabic, and Latin professors of physic settled at Salernum, which place soon grew into that credit that Charles the Great thought fit to found a college there in the year 802, probably at that time the only one of the kind in Europe(*a*).

About the close of the tenth century, Jews, from their knowledge of the Arabic language, were the chief physicians in Europe; and although, by the canon law(*b*), no Jew might be a physician or give physic to a Christian, there was scarcely a Christian Court where physicians of this nation were not entertained, and even some Popes retained them in their service(*c*).

The patron of the College of Salernum was St. Matthew; the motto of its seal, "*Civitas Hippocratica*." The student of physic was obliged to devote three years to philosophy, afterwards five to medicine, and at the same time to study surgery, "which forms a part of medicine;" and if to be admitted surgeon, he was to study anatomy for one year. He was sworn to inform the royal authorities when a druggist (*confectionarius*) falsified medicines; to prescribe for the poor gratuitously; to have no share of gains with the apothecaries; and not to keep a pharmacy (*statio*) himself(*d*).

The apothecaries were obliged to provide themselves with certificates of their capacity from the faculty of medicine, and to bind themselves by an oath to prepare their medicines according to the formulary of the School of Salernum, approved of by the State. They were forbidden to charge more than a certain profit; were obliged to prepare their syrups, electuaries, and antidotes in presence of sworn commissioners; in case of

(*a*) Freind, vol. ii. p. 218.

(*b*) This law was established at the instigation of the clergy, who were now endeavouring to rival the Jews as practitioners of physic, and through its operation they eventually succeeded in superseding them.

(*c*) Page 227.

(*d*) See Freind, vol. ii. p. 230; and Sprengel, vol. ii. p. 363, 364.

infringement of which law they were liable to confiscation of their goods, and the commissioners, if accomplices, were punished with death(*a*).

The school of Salernum appears to have been the earliest establishment in which what may be styled regular medical diplomas were granted to candidates after they had passed through a prescribed course of study, and been subjected to examination(*b*). It survived the Saracenic School in Spain, and about the year 1225 had great privileges conferred on it by the Emperor Frederick II. Towards the end of the fifteenth century, however, it was eclipsed by the rising reputation of the Universities of Bologna and Paris.

In most parts of Europe, however, the exercise of the medical profession had now fallen into the hands of the monks and other clergy, who were generally very ignorant, and practised physic, in all its branches,—combining the operative parts of surgery with the prescribing and administering of medicine. Their books were bad Latin translations of the Arabic, itself, in many instances, a bad translation of the Greek. The eighth Canon of the Council of Tours (A. D. 1163) declared that none of the regular clergy should devote their attention to physical compositions (*confectiones physicales ponderandas*); and other decrees were issued, prohibiting the higher clergy from practising any branch of physic, and forbidding the lower orders to perform any surgical operation, especially any involving the use of fire or cutting instruments. From this time the monks confined themselves to the prescribing of medicines, to be compounded and administered by others, and wholly abstained from the manual operations of surgery; in consequence of which this deserted profession fell into the hands of the barbers and smiths, the former of whom had usu-

(*a*) Sprengel, vol. ii. page 365.

(*b*) History of Medicine, Cyclopædia of Practical Medicine, p. xxxvii.

ally been employed by the monks to assist at the baths, in the application of ointments, and in various surgical operations, and soon became the chief practitioners of surgery(*a*).

In England these barber practitioners kept little shops for cutting hair, shaving, bathing, and curing the wounded, particularly about the royal palaces and houses of the great, exhibiting the bandaged pole as a symbol, “that all might know where to apply in time of need.”(*b*)

That the apothecaries, as “compounders of medicine after the orders of the physician,” first existed among the Arabians, there can, I think, from what has been stated, be little doubt; and it is probable that the practice of pharmacy, as it had existed in Africa, was introduced into Spain and Italy by the Arabian physicians who accompanied the Caliphs, or Arabian princes. They appear, in process of time, to have thence extended northwards, and to have supplied the continent of Europe. It will be seen hereafter that the apothecaries of Great Britain and Ireland, for the most part, originated in a different manner; and to this difference may, perhaps, be due the fact that, while they, at an early period, became practitioners in physic, their continental brethren have always confined themselves to pharmacy and the strictly collateral sciences, chemistry and botany(*c*). Dr. Mohsen(*d*) states, that the first apothecaries in Germany came from Italy, and Sprengel(*e*) informs us, that in the fifteenth century the custom of the Arabs was adopted in France, and that the apothecaries were sub-

(*a*) See Willcock's *Laws of the Medical Profession*, p. 8; Fleury's *Hist. Eccl.*, tom. xv. p. 134; Sprengel, vol. ii. pp. 350, 351; and Penny Cyclopædia, art. “Surgeons, College of.”

(*b*) Willcock, p. 16.

(*c*) In the eleventh volume of the First Series of the *Dublin Medical Journal*, p. 358, there is an interesting paper, by Doctor, now Sir Robert Kane, on the State of Pharmacy in Germany.

(*d*) *Geschichte der Wissenschaften in der Mark Brandenburg, besonders der Arzneywissenschaft*. Berlin, 1781. 4to.

(*e*) Vol. ii. p. 484.

jected to the superintendence of the Faculties, and of physicians salaried by the State(*a*). At this epoch the apothecaries of Germany were only druggists; they prepared no medicaments, but brought them from Italy to sell. In the majority of towns they followed at the same time the business of confectioners; and the magistrates always specified in their licenses, that they should send each year a certain quantity of good sugar confections to the Council House(*b*).

In Halle the first apothecary's shop was opened in 1493, before which period medicines were sold only by grocers and barbers. In Stutgard a shop was opened early in the fifteenth century by a person named Glatz; at Augsburgh one was kept by a female apothecary in 1445; in Frankfort-on-the-Maine shops existed before 1472; at Berlin one was established in 1488. In 1409, when the University of Prague was moved to Leipsic, an apothecary's shop was opened there, and called, as that at Prague had been, by the name of the Golden Lion(*c*). In 1507 an order was passed that the apothecaries' shops should be from time to time inspected; in 1512 a price was set upon their medicines, and all others were forbidden to deal in them.

In many places, and particularly in opulent cities, the first apothecaries' shops were established at the public expense, and belonged to the magistrates; a particular garden was also often appropriated to the apothecary, in order that he might rear in it the necessary plants. Apothecaries' shops for the use of courts were frequently established and directed by the consorts of princes; one of this kind was founded at the court of Dresden by the Electress Anne, a Danish princess, in the year 1581(*d*).

(*a*) In France the apothecaries received their Statutes in the year 1484, from Charles VIII.

(*b*) Sprengel, vol. ii. p. 484.

(*c*) Beckmann's *History of Inventions*, translated by Johnston, vol. ii. p. 140.

(*d*) Beckmann, *Op. cit.*, p. 141.

In Hanover the first apothecary's shop was established by the Council of State in 1565.

Gustavus Erickson, King of Sweden, was the first person in that country who attempted to establish an apothecary's shop. On the 20th of March, 1547, he requested Dr. John Audelius, of Lubec, to send him an experienced physician and a good apothecary(*a*). On the 5th of May, 1550, his body physician, Henry Von Diest, received orders to bring a skilful apothecary into the kingdom. When the king died in 1560, he had no other physicians with him than his barber, Master Jacob, an apothecary, Master Lucas, and his confessor, Magister Johannes, who, according to the fashion of the day, practised physic and prescribed for His Majesty. Master Lucas, it appears, was the first apothecary at Stockholm(*b*).

The first apothecary mentioned in the *Fœdera* is Coursus de Gangeland, an apothecary of London, to whom Edward III., in the year 1345, granted a pension of *6d. per diem*, for taking care of and attending His Majesty during his illness in Scotland(*c*). In the same reign Pierre de Montpellier appears,

(*a*) The following is Frederic Hoffmann's description of a good apothecary, &c. :

“*Pharmacopœus debet esse in arte preparandi instructus, circumspectus, Latina lingua gnarus, materiam medicam tam simplicium quam compositorum accuratissime dignoscens, indigenarum et exoticarum notitiam habens, dilecta emat, eademque visu, gustu, olfactu, tactu, et aliis examinat modis, vasculis idoneis reponat, singulis mensibus singula perlustrat et dilectum instituat. Fabam suam non mittat in mossam (?) medicam et Praxin non exerceat, nil sine medici præsitu in componendo immutet, ne quid pro quo substituet, nec ullius quam medicinæ doctoris formulas vel receptas recipiat, purgantia, opiata, vel deleteria, nemini de plebe vendat, nec doctorum arcana alio faciat communia.*

(*b*) Beckmann.

(*c*) “*De pensione apothecario solvenda. Rex thesaurario et Camerariis suis salutem cum nos curam sollicitam quam dilectus nobis Coursus de Gangeland, apothecarius Londoniæ, circa nos, nuper in partibus Scotiæ, dum gravi detinebamur ægritudine apposuit,*” &c.—*Rym. Fæd. An. 19 Edw. III. A. D. 1345.*

from the wardrobe account, to have been apothecary to Prince Edward in 1360; and J. Falcand de Luca sold medicine in England in 1357.

But this importation of foreigners did not long continue. The attendants of Henry VI., three physicians and two surgeons, who were appointed by his Council to administer medicines and advice, are obviously English names,—Arundel, Saceby, Hatcliffe, Warren, and Marshall.

“In the reign of James I. the apothecaries were incorporated with the grocers, and continued so until the thirteenth year of his reign, when they were formed into a distinct corporation. Their union, probably, arose originally from the grocers having added to their stock some ointments and medical herbs; on the introduction of chemical medicines, however, when too great a variety in the mixtures of the physicians had rendered the medical department of their trade unintelligible to the ordinary grocer, the pharmacopolites appeared as a separate class, and claimed a superiority over the dealers in cheese, butter, and sugar”(a).

They had from a very early period occasionally prescribed the medicines which they sold, thus trespassing(b), as it was thought, on the province of the physician, until their right to do so was supported by the decision of the House of Lords, in the case of the College of Physicians against Rose, in 1703, since which they have continued to enjoy this privilege without molestation.

(a) Willcock's *Laws of the Medical Profession*, p. 18.

(b) According to Murett (himself a physician), in his “*Short View of Frauds and Abuses*,” published in 1669 (in which he complains of the encroachments of the apothecaries), the physicians were the original cause of their practising: “Sending them to visit their patients to give them the best account they could of the state of their health and effect of their medicines; and of later years taking them with them in their visits;” so that, “in the plague time, 1666, most of the physicians being out of town,” the apothecaries “took upon them the whole practice of physic.” See *London Medical and Physical Journal*, vol. xii. p. 429.

So generally had this branch of the Faculty superseded in many respects the practice of the physician in England, that in the 55 Geo. III. an Act was passed to provide for the deficiency of their education; thus, for the first time, placing them, as a body, on the footing of a liberal profession(a).

I must now return to the barbers, in whose hands we left the practice of surgery after it had been abandoned by the clergy, in consequence of the decrees of the several Councils held in the twelfth and thirteenth centuries; and the earliest medical body in Ireland, of whose incorporation I have been able to discover any record, is the fraternity or guild of the art of barbers, or Guild of St. Mary Magdalene, of the City of Dublin, which was established by royal charter on the 18th of October, in the twenty-fifth year of Henry VI. (1446), for the promotion and exercise of the art of chirurgery. It was to consist of "men as well as women," as brothers and sisters of the guild; to have a master and two wardens for its rule and governance; and to have a common seal, and power to possess lands and tenements, &c. A copy of this charter was in the possession of the Master of the Corporation of Barbers in the year 1747, but appears to have been since lost. No notice of it appears in the Rolls of the Court of Chancery, which are deficient for a few years before and after the date of the grant; nor could any trace of it be found among the records in Birmingham Tower, the Index to which Sir William Betham, with great kindness and courtesy, carefully searched. The foregoing particulars are, however, recited in a charter subsequently granted to the corporation, in the nineteenth year of the reign of Queen Elizabeth, 1576, to which I shall presently more fully allude, and which I was fortunate enough, after considerable search, to find in the possession of Michael Farrell, Esq., of Harcourt-road, the last Master, and one of the last representatives of the Guild in the Common Council of the

(a) Willcocks, p. 19.

Corporation of Dublin, whose kindness in allowing me at all times free access to this and other most interesting documents, I am happy to have this opportunity of acknowledging.

It is remarkable that in England the barber surgeons did not receive their incorporation until the first year of the reign of Edward IV., (1461) (*a*). The charter granted to them states that there was a mystery of barbers practising surgery; and recites the mischiefs which arise from ignorance of surgery, and the necessity of superintendence which existed; it incorporates the mystery aforesaid; appoints masters or governors; grants a common seal, the power of acquiring lands to the annual value of five marks, and the superintendence of all surgeons in London and the suburbs, with power of punishing them; and it exempts the members from attendance on juries, and gives them the power to admit, “in dicta Misteria Sirurgica—personas habiles et sufficienter eruditas.”

The surgeons were incorporated with the corporation by Act 32 Hen. VIII., c. 42.

It is doubtful whether the Dublin barbers received from Henry VI. the same privileges, such as exemption from juries, as their London brethren did from his successor; but this is a point which may, perhaps, with a few others, be at some future time cleared up by the discovery of the charter, or a copy of it.

The charter of Queen Elizabeth, having recited that of Henry, proceeds: “And we, having maturely considered how useful and necessary it would be for preserving the health of the human body, that there were more persons skilled in the art of chirurgery within the city of Dublin (sickness and infirmities committing vast havock),” &c.; “and because there are now two distinct societies practising the said art and faculty in our city aforesaid, viz., one of barbers and the other of chirur-

(*a*) In Scotland the barber surgeons were incorporated in 1505. London Medical and Physical Journal, vol. xxvii. p. 116.

geons, which said society of chirurgeons is not as yet constituted nor incorporated into any body politick; and it being necessary to blend, joyn, and reduce the said distinct and separate societies of barbers and chirurgeons into one body, that in one close, aggregate, and connected fellowship the art and science of chirurgery may flourish as well in theory as in practice; and as such union would greatly conduce to, and be a means of perfectly learning and exercising the art aforesaid, and assisting both themselves and their present and future apprentices," &c., the charter then goes on to incorporate certain chirurgeons by the name of the Guild of St. Mary Magdalene, and subsequently, at the petition of this society of chirurgeons, and of the Master and Wardens of the Fraternity of Barbers, amalgamates the two into one body corporate, by the title of the "Master, Wardens, and Fraternity of Barbers and Chirurgeons of the Guild of St. Mary Magdalene, within our City of Dublin." It is also granted to the guild that no one within the city and suburbs of Dublin, and franchises thereof, shall exercise any of the arts of chirurgeons or barbers, unless admitted by the master and wardens, and major part of the brethren of the said guild, under a penalty of five pounds for every month of trespass.

It would appear that this corporation for some time used the same coat of arms as the Corporation of Barber-Surgeons of London, "with some small difference, being a note of diminution or subordination." But it being necessary that corporations of different and independent cities, though of like profession, should have some difference in their arms, this corporation, "having no dependence on any other city," received from "William Roberts, Doctor of the Civil Lawe, Vluester Kinge of Armes of the whole Kingdome of Ireland," &c. &c., by virtue of the power committed to him, and in consideration of services rendered by the corporation to the Crown, the following independent coat of arms, viz.: "Parted by a crosse of England, charged with a lion passant gardant, argent, crowned

or; these two coates armour quartered, *viz.* the first argent, a cheveron gules betwixt three cinquefoyles azure; the second coate armour azure, a harpe crowned or; the third as the second; the fourth as the first; the creast, on a helme and wreath argent and gules, St. Mary Magdalene, &c. Mantled gules; double argent supported by a leopard proper and an Irish greyhound argent, each gorged with a ducal coronet, and standing on a scrowle, with their motto, *viz.*, ‘✠ Christi, Salus Nostra.’”(a)

Mr. Farrell has likewise in his possession a charter granted by James II. to the same corporation; it is dated 10th February, 1687, in the third year of his reign. It commences by reciting the seizing of the franchises, liberties, and privileges of the city of Dublin, by a judgment of the Court of Exchequer, by which the body corporate, as well as “the minor guilds composing the great body corporate were dissolved,”(b) and mentions the new creation of the corporation by letters patent, dated 3 James II., Oct. 27, and then goes on to state that, “We, nevertheless, being willing, in order to the promoting of trade and traffick in our new city of Dublin, to renew the guild or corporation of Barbers, of which the barbers, chirurgeons, apothecaries, and periwig-makers of the city of Dublin

(a) See Grant of Arms, in the possession of Michael Farrell, Esq.

(b) “In 1686 the Earl of Tyrconnel, then Lord Deputy, had endeavoured to persuade the city to admit Roman Catholics to freedoms and offices in it, contrary to the established laws, that by their means he might obtain a surrender of the charter, and so settle the corporation in the hands of the Roman Catholics. But the Lord Mayor and aldermen having frustrated this design the Earl brought a *quo warranto* against the charter. The Lord Chief Baron Rice would not allow the city so much time to put in their plea as was sufficient to transcribe it with care. In the hurry a mistake was made in the date of one of the charters, which the city discovering prayed leave to amend, but this was denied, and judgment given against the charter upon this defect of pleading, the merits of the case never coming in question. The same way were most other corporations of the kingdom dealt with.”—*Whitelaw and Walsh’s History of Dublin*, p. 219.

were members, to the intent that the several arts and mistereyes of barber-chirurgeons, apothecaries, and periwig-makers may be the better exercised," &c., "do constitute one guild or fraternity of the arts," &c., by the name of the Guild or Fraternity of St. Mary Magdalene, to consist of one master, two wardens, and of the brothers of the arts aforesaid, by the name of the Master, Wardens, and Brothers of the arts of Barber-Chirurgeons, Apothecaries, and Periwig-makers of the Guild or Fraternity of St. Mary Magdalene. William, Earl of Limerick, John Barnwell, Knt., Robert Barnwell, Esq., Richard Archbold, &c., physicians and readers of anatomy, Charles Thompson, Henry Walker, and others, to be the first brothers of the guild. The corporation had power to punish every falsity, fraud, deceit, oppression, extortion, and every other crime committed by barbers, chirurgeons, apothecaries, or periwig-makers in Dublin, or within six miles of it. They were empowered to inquire into the character of apprentices previously to their being bound: the term of apprenticeship was fixed at seven years. Apprentices were required to enrol themselves within two months after being bound; the indenture of any apprentice otherwise taken to be void: the person taking the apprentice, under such circumstances, was to pay half a mark for the use of the guild. The guild had power to arrest runaway apprentices. They might admit women as members. Some of the members were obliged to take yearly two of the poor boys from the Hospital at Oxmantown (Blue-coat or King's Hospital) for seven years.

Thus while no mention is made of the apothecary in the charter of Elizabeth, that of James states that the apothecaries of Dublin were before this time an integral part of the corporation of barber-surgeons, and they were subsequently treated as such; for after they had been, in the reign of George II., constituted a distinct corporation, two of the four representatives in Common Council, previously belonging to the barber-surgeons, were taken from them, and given to the new corpo-

ration of apothecaries,—a measure at the time vehemently opposed by the barbers, and the repeal of which they afterwards sought in vain.

Keogh, in the Preface to his *Botanologia Universalis Hibernica* (published in 1735), urging the advantages of using indigenous, instead of exotic plants, in medicine, says:

“In the primitive or ancient times there were here no druggists’ or apothecaries’ shops, no foreign drugs brought hither; but the natives made use of the medicinal preparations of their own country, by which means they prolonged their lives to the very extremity of old age, and dropped, like ripe fruit, with a gentle decay. We did not hear of druggists or apothecaries before the flood (the antediluvians were unacquainted with them), nor yet after the flood for a considerable time,—*nay, in this very kingdom there were scarcely two in a province a hundred years ago(a)*, yet the people then lived to very advanced years.”

From these premises, I think, it is evident that the apothecary profession sprang up in Ireland during the interval which elapsed between the granting of the charter by Elizabeth in 1576 and that of James in 1687, and that it and the profession of surgery have, in this country, had a common origin; and it

(a) Evidence of the existence of apothecaries in different parts of Ireland, at a period a little subsequent to the time alluded to by Keogh, is afforded by penny-tokens issued by the following apothecaries in the seventeenth century:

1. Gerrard Colley, at Red Cross, in High-street, Dublin, Apothecary.
2. Henry Bollardt, Apoticary, in Dublin, 1654.
3. Henry Bollardt, Apoticary, in Dublin, 1663.
4. Henry Rugge, Apothecary, in Castle-street, Dub.
5. Marke Quine, Apothycary, in Dublin, 1654.
6. Ro. Nellson, of Dunganon, Apothecary.
7. Richard Pearce, of Limrick, Apothecar, 1668.

All the above tokens are in Dr. Aquilla Smith’s cabinet, with the exception of the Dunganon token, which is in the Royal Irish Academy collection.

will appear that their interests were for many years subsequent to the latter date identical,—their governing body the same. In Scotland they originated in the same manner, and have never been disunited; the diploma of the Royal College of Surgeons is a license to practice pharmacy as well as surgery; and there is no Apothecaries' Company in Edinburgh(*a*).

The Charter granted by William and Mary, in the fourth year of their reign(*b*), to the King's and Queen's College of Physicians in Ireland, empowered the College to examine all persons intending to become apprentices to apothecaries; these apprentices were required to be well skilled in the Latin tongue; and apothecaries taking them without this previous examination were liable to a penalty of £20. By the same charter none were to be allowed to practise physic in Dublin, or within seven miles thereof, without the license of the College, under a penalty of £10 per month. The College had also the power of entering apothecaries' shops, examining the drugs, and of burning and destroying such as they found unfit for use; they could also examine the apothecaries themselves upon oath, if they thought necessary.

This charter appears to have been ineffective, for we find the College, on the 20th of November, 1695, applying to the House of Commons(*c*) for its confirmation by Act of Parliament; and their petition was referred to a committee appointed to prepare the heads of a bill for the purpose, who were also instructed to report what fees ought to be allowed the physicians. On the 23rd November a counter-petition was presented from the corporation of barber-chirurgeons and apothecaries,

(*a*) "The surgeons of the Edinburgh College are, in fact, qualified as general practitioners, and from this body are the general practitioners of Scotland exclusively derived."—*Ed. Med. Surg. Journal*, vol. xiv. p. 11.

For the union of Chirurgery and Pharmacy which existed in Edinburgh, about 1700, see *Ed. Med. Surg. Journal*, vol. iii. p. 379.

(*b*) 12 Oct. 1692.

(*c*) Journals of the Irish House of Commons, vol. ii. p. 117.

stating that Henry VI. had, by royal charter, granted to them, and persons approved by them, the exclusive right of practising chirurgery in Dublin, which privilege had been confirmed by Queen Elizabeth. They then allude to the penal clauses in the physicians' charter, which restrict the practice of physic and preparation of medicines to the licentiates of the College(*a*), and impose fines upon any "who shall presume, contrary to said charter, to practise physic, or administer or prepare any internal medicine;" and represent that surgical cures cannot be completed without the use of internal medicines; and that the poorest people, who are unable to fee physicians, are the most liable to accidents requiring the assistance of the surgeon; they state that many surgeons prepare their own medicines, both as a matter of convenience and for the instruction of their apprentices; and point out the necessity which would arise, of having in every ship, and in every regiment, a physician, surgeon, and apothecary, if the surgeons (in whose charge the lives of His Majesty's army and navy, and of most of those who sail in merchant ships, were placed) should be debarred from the practice of physic, adding, that now the surgeon and apothecary, for little or no charge, often relieve and cure those who cannot fee a physician(*b*). They finally allude to the frustration, in consequence of the opposition of the surgeons, of a similar attempt on the part of the London physicians; and showing that the "chirurgeons in all parts of England, and also apothecaries, freely practise physic

(*a*) The words of the petition are "That the Physicians of this City have obtained a charter from His Majesty, thereby prohibiting and disabling all persons whatsoever, unless such as are approved and *licensed* by them from practising physic or administering any internal medicine, or *preparing any medicinal compositions*," &c. It does not appear from the charter that the College were authorized to give a license for the latter purpose, but they had power to "supervise, examine, survey, correct, and punish all apothecaries, druggists," &c.

(*b*) Adam Smith, in his *Wealth of Nations* (1776), book i. chap. 10, calls the apothecary "the physician of the poor in all cases, and of the rich where the distress or danger is not very great."

as well as surgery and pharmacy," conclude by urging how disadvantageous the restraining them (the petitioners) from the practice of physic would be to all His Majesty's subjects; and praying that the physicians' charter might be produced to the House, and that the petitioners might be heard by counsel against the Bill.

It was resolved that the corporation should be heard by counsel(*a*), and the Bill was dropped.

A committee was appointed in 1698 to prepare a bill to regulate the practice of physic in Ireland, and in 1703(*b*) another was named to bring in the heads of a Bill "to regulate the practice of physic and chirurgery, and of apothecaries, in the city of Dublin."

In 1711 the corporation resolved to prosecute Thomas M'Awée for "setting up a shop, and exercising the trade and mystery of an apothecary or surgeon," without being free of their body; and expressed their determination to punish all who should be guilty of a similar offence(*c*).

From these extracts it would appear that at the close of the seventeenth century both surgeons and apothecaries were general practitioners, the former practising physic and surgery, and compounding for their own patients, while the latter, in addition to practising physic, kept open shop. Both seem to have received a low rate of remuneration, while the physician, who probably confined himself to the practice of physic, was highly paid.

The former attempts on the part of the College to obtain powers from Parliament had evidently been unsuccessful; for, in 1725(*d*), a petition of the President and Fellows was presented, setting forth that the charter granted to them by William and Mary had been found insufficient "to restrain unskilful, illiterate persons from practising physic; and that the abuses

(*a*) Journals of the Irish House of Commons, vol. ii. p. 125.

(*b*) Ibid. page 322.

(*c*) Transaction Book, July 16, 1711.

(*d*) Journals of the House of Commons, vol. iii. p. 429.

intended to be reformed in the practice of physic and making and selling of drugs had greatly increased." In accordance with the prayer of the petition, a Bill was brought in, petitioned against, as usual, by several apothecaries, and by the corporation, and eventually defeated.

In the year 1735, however, an Act received the sanction of the Legislature, "for preventing frauds and abuses in the making and vending unsound, adulterated, and bad drugs and medicines."^(a) It provided that four inspectors of apothecaries' shops should be annually appointed by the College of Physicians, to act together with two apothecaries of good repute, or, should the latter refuse, then without them, with power to burn or otherwise destroy any unsound drugs which might occur to them in their inspection: penalty for obstruction, £10. And for the more easy carrying out this search, all apothecaries, chemists, and druggists were to enrol themselves with the Registrar of the College of Physicians before the 1st of September, 1736, and to pay a fee of one shilling for registration, otherwise they were to be considered unlawful professors of the art or mystery.

It was also provided that no person who had not before the 1st of May, 1736, exercised the trade or mystery of an apothecary, chemist, or druggist, should, within the city or liberties of Dublin, or within seven miles thereof, follow any branch of said art, mystery, trade, or occupation, until he had served an apprenticeship of five years at the least, and lodged with the Registrar of the College of Physicians a certificate from his master, or, in case of his master's death or refusal, from two others of the same trade, of his having served five years, and of his being fit and able to exercise his trade and mystery: penalty, £5 per month.

Every physician, surgeon, or other person taking on him-

(a) Irish Statutes, vol. vi. p. 203; 9 Geo. II. c. 10.

self to prescribe medicines, was to sign the prescription or recipe with his name or initials; and to express the quantity of all drugs in words at length and not by marks, under a penalty of 40s. for every omission.

The penalties under this Act were recoverable in a summary way before the Lord Mayor and Recorder of the City of Dublin.

Any apothecary altering a prescription without stating on the label that he could not procure the medicine changed, and also what he had substituted for it, was liable to a penalty of 40s.

This Act was originally intended to remain in force for three years, but it was several times renewed, and lastly, on the 1st of May, 1749, it was renewed for seven years, "and to the end of the then next session of Parliament."

By 19 Geo. II. c. 15, power was given to the inspectors under this Act to examine upon oath the journeymen, servants, and apprentices of apothecaries as to the quantities and qualities of drugs on the premises; but this power was repealed by 21 Geo. II. c. 7.

The corporation of apothecaries, or guild of Saint Luke, received its charter from George the Second, on the 18th September, 1745, in compliance with the prayer of a petition presented by Aldermen William Walker, Robert King, and Thomas Baker, Henry O'Hara, and others, apothecaries, in which they represented the frequent frauds and abuses imposed on the King's lieges, in different parts of Ireland, through the ignorance and unskilfulness of pretenders to the art of the apothecary, for the preventing and correcting of which no sufficient rules had yet been laid down.

This petition was referred to the College of Physicians for their opinion, who reported that the incorporation of the apothecaries might be useful, provided no power were given them to make by-laws respecting the composition of medicines with-

out the previous approval of the College, and that the powers vested in the College by the Act of 1735 should remain undisturbed.

The charter was accordingly granted, in consideration of the number of apothecaries in the city and suburbs being so great as to require the enactment of “reasonable and convenient orders for their rule and government.”

A master, two wardens, and thirteen assistants, were to be elected yearly on the 18th of October, and were to have the power of making by-laws for the governance of the members and other apothecaries in Dublin. They had power to impose penalties on offenders, and the officers of the corporation were exempted from serving on juries, and from filling parish offices.

The meetings, with the exception of the first (which took place at the Mayoralty House, on the 25th of April, 1747), were held in the hall of the corporation, Back-lane, until 1765, after which they were held at the house of the master for the time being, until the opening of the Apothecaries’ Hall, in 1791. Since its establishment the corporation has always met at the Hall.

The committees of the corporation usually, as was the custom in those days, met at taverns, and, consequently, the names of many of these are preserved in the Transaction Book(*a*).

Such apothecaries as were not free of the corporation were, on proper application, allowed to follow the profession as quarter brothers, and were obliged to contribute a certain sum quarterly to the funds. This system of quarterage—a tax imposed by the various guilds on those who followed their respective trades—was abolished by Parliament in 1782. Those who presumed to follow a trade without being either freemen or quarter-brothers, were called foreigners, and were fined for “intrusion.”

(*a*) Rose and Bottle, Dame-street, 1760; Rose Tavern, Castle-street; Bull’s Head, Fishamble-street, 1754; Flying Horse, Mountrath-street; Elephant, in Essex-street; Phoenix, in Werburgh-street; Three Stags’ Head, Eustace-street; Carteret’s Head, Castle-street, 1769.

The apothecaries endeavoured to make the distillers pay quarterage for manufacturing “bryony water,”(a) and “hot cinnamon water,”(b) but seem to have failed in the attempt.

In 1751 the apothecaries were required by the College of Physicians to use in future the troy weights. I have not been able to ascertain, either from the books of the College or those of the corporation, what weights had been in use previously to 1751.

The franchises, or triennial perambulations of the city boundaries, were a constant source of dispute between the apothecaries and the civic authorities; the former considering “their necessary attendances in the way of their profession” a sufficient excuse for their non-attendance; the latter endeavouring to compel them to take part in the procession.

In 1755 the corporation presented Dr. Constantine Barber, Professor of Pharmacy in the University, with his freedom.

They exercised a general superintendence over matters relating to the profession: thus we find them at one time punishing “the fraud of vending rudon(c) instead of senna;” at another (December, 1756), giving notice by public advertisement, that large quantities of a bark imported from North America had been sold in London as Jesuits’ bark, which it resembled in

(a) Spirit of wine, distilled from bryony root and several other ingredients. According to Quincy (1729), “a very untoothsome composition, but admirably well suited to the intention of an hysterick.” It appears, however, to have had very Protean properties, for he tells us further, that it “is very forcing upon the uterus, which makes it given to promote delivery,” &c.; and “is likewise good against convulsions in children, and of service in any nervous complaint in either sex.”

(b) Hot it certainly must have been: “Take of cinnamon, lb. i.; French brandy, 1 gallon; distil lb. x.”—(Quincy.)

(c) I have searched several old botanical lists and pharmacopœias in vain for this word; the only name which resembles it is “extractum rudii,” described in Fox’s Medical Dictionary as being composed of hellebore, colocynth, aloes, scammony, vitriolated tartar, and oil of cloves. Perhaps this drastic cathartic may have been substituted for some preparation of senna.

appearance, though not in taste, and cautioning dispensers of medicine against it.

In the proceedings of the 25th of June, 1761, appears the first notice of an intention to establish an Apothecaries' Hall, which, thirty years later, less by one day, commenced its operations. The Master, Samuel Borrowes, suggested the erection of a laboratory and public hall. The question was, however, adjourned, on account of an insufficient attendance of members.

In the same year, a bill, which is still in force, and under which the inspectors of apothecaries' shops are appointed by the College of Physicians(*a*), was brought in by the celebrated Dr. Lucas, and from him called Lucas's Act(*b*). It gives the College the power to enlarge the number of its Fellows; to appoint four inspectors of apothecaries' shops in Dublin and within ten miles of it; and to require the corporation of apothecaries to elect two assistants, whose co-operation is not, however, absolutely necessary, as, in case of non-compliance, the college inspectors may proceed without them. Unsound drugs may be destroyed by the inspector, but the owner has the power of appealing to the College at large; if, however, the judgment of the inspectors be confirmed on the appeal, the unsound drugs and containing vessels are to be destroyed before the owner's door. Penalty for obstruction, £20. By the eleventh section the college is empowered to

(*a*) 1 Geo. III. c. 14, made perpetual by 30 Geo. III. c. 45, s. 11, anno 1790, entitled, "An Act for preventing Frauds and Abuses in the vending, preparing, and administering Drugs and Medicines."

(*b*) At the time of its passing Dr. Lucas was Member for the City of Dublin, and kept an apothecary's shop in Charles-street. Having had a quarrel with the College of Physicians, he revenged himself in a singular manner. He obliterated all the labels of his shop, and disguised sundry substances, so as to make them resemble different kinds of medicines. When the inspecting physicians came to examine, they were exceedingly embarrassed to ascertain the different kinds, and he boasted that they actually acknowledged a substance to be good rhubarb, which he afterwards proved to be toast and turmeric.—*Whitelaw and Walsh's History of Dublin*, vol. ii. p. 749.

frame a pharmacopœia, which all apothecaries are, by the twelfth, compelled to observe, under a penalty of £10 for every offence. Wrong weights and measures are to be destroyed. Penalties are enacted against the substitution by apothecaries of one medicine for another, and also for disguising pills, &c., with copper, brass, Dutch gold, Dutch metal, &c.

Every physician or surgeon prescribing medicine, is to sign the prescription with his name or initials, and with those of his profession, and, if a physician, with the name or initial of the university of which he is a graduate, unless he be a member of the Royal College of Physicians, in which case the initials of his name to be sufficient.

By an Act passed(*a*) in 1763, the minister of a gaol is empowered, in case of sickness of any prisoner, to employ a physician, apothecary, or surgeon, and to pay for medicines prescribed by them or either of them.

The proceedings of the corporation at this period are very devoid of interest. In 1763 they expelled one of their members for endeavouring to procure the transference of their two “numbers”(*b*) to the barber-surgeons. In 1765 a committee was appointed to consider a plan for erecting a laboratory; and in 1766 they presented Dr. Lucas with an address, thanking him for his zealous and spirited conduct in Parliament.

In 1767 an Act(*c*) was passed for directing the application of £7000 granted to the Dublin Society for the encouragement of such trades and manufactures as should be directed by Parliament; and the Society were, by the third section, empowered to appropriate sums not exceeding £250 towards erecting and establishing a “Pharmacopœia Pauperum, for dispensing

(*a*) 3 Geo. III. anno 1763, c. 28, s. 5. “An Act for the better preventing the Severities and unjust Exactions practised by Gaolers against their Prisoners,” &c.—*Irish Statutes*, vol. ix. p. 148.

(*b*) The representatives of the corporation in Common Council were called “Numbers.”

(*c*) 7 Geo. III. c. 15.

medicines to the poor of the city of Dublin according to the plan of John Wade, chemist."

Wade's "Chymical Elaboratory and Dispensary for the Poor" was accordingly established in Capel-street, for supplying the apothecaries with pure, unadulterated medicines, and for relieving the poor on cheap and easy terms, the plan having been previously honoured with the sanction of "our learned College of Physicians;" and that the Institution "might be rendered as beneficial as possible, and the purity of every composition be established on the surest principles, Mr. Wade devoted his whole attention and industry to chemistry, to which science pharmacy is not only indebted but owes its chief support."(*a*)

From a return made to the Dublin Society, November 1, 1770, it would appear that from the 2nd June, 1768, to 25th October, 1770, 1570 indigent persons were relieved; and that of this number a great part had been attended at their respective habitations, in the most remote parts of the city and its environs, *gratis*.

The object of the institution seems to have been the same as that of the dispensaries established by the London College of Physicians towards the end of the seventeenth century(*b*), viz., to supply the poor with advice without charge, and with medicines at their cost price.

The opening of a depot where apothecaries could be supplied with unadulterated medicines was, in those days, a most important object; and the difficulty of obtaining pure drugs in

(*a*) Pamphlets in the Library of the Royal Dublin Society, s. d. 32, No. 15.

(*b*) It was at first intended that medicine as well as advice should have been given gratis at these establishments, but the College of Physicians found it impossible to carry out this intention. They bound their members to prescribe for the poor gratis; and fifty-three of the fellows subscribed £10 per annum each, and opened three dispensaries, at which the medicine prescribed was sold to the poor at its "intrinsic value." The opposition of the apotheca-

Dublin was one of the principal reasons for establishing the Apothecaries' Hall twenty years later.

Mr. Wade urges the claims of his institution on public support in the following terms: "Reclined on the soft bed of sickness, attended by servants who anticipate the half-delivered command, and fly with joy to execute it, furnished with all the aid that physic can give or her sons administer, the man of opulence may act the sick man with some degree of firmness, and entertain the smiling comforter Hope with some appearance of reason. But stretched on his hard bed of matted flock or wretched straw, in his dirt-built hovel, the whistling winds forcing through the tattered building, and his wife and children crying for bread, and unable to administer the smallest consolation, how shall the poor manufacturer or peasant, wrung

ries to this measure is thus described by Sir S. Garth in his humorous poem, "The Dispensary:"

" The Faculty of Warwick-lane design,
If not to storm, at least to undermine;
Their gates each day ten thousand night-caps crowd,
And mortars utter their attempts aloud.
If they should once unmask our mystery,
Each nurse, e'er long, would be as learned as we,
Our art exposed to every vulgar eye,
And none in complaisance to us would die.
What! if we claim their right t' assassinate,
Must they needs turn apothecaries strait?

* * * * * * *

Our manufactures now they meanly sell,
And spitefully the intrinsic value tell."

When the College prosecuted Rose for practising physic, he urged that if apothecaries were thus restrained, the necessity of feeing physicians would be a great oppression to the poor. The College, in reply, quoted their regulations as to prescribing gratis, and brought forward the existence of the above dispensaries, where the poor might have their prescriptions compounded, "for a third, or generally less, of what the apothecaries used to exact for it."

with excruciating torture, support the trying scene, or acquiesce in Heaven's awful visitation?"

In the following session of Parliament Mr. Wade petitioned for a further aid of £250; and having proved before a Committee of the House the great importance and utility of his Dispensary, and that he was in considerable advance for the same, he having relieved upwards of 2000 persons in their various illnesses, he received a further bounty of £250, *nem. con.*

This benevolent man did not confine himself to supplying advice and medicine to the sick and indigent, he frequently enabled them to purchase the necessaries of life, which they must otherwise have been deprived of. Witnessing deplorable scenes of poverty and distress which he could not relieve, he suggested the creation of a tax of one shilling on each house paying not less than £10 rent: this, he said, would be more than sufficient to establish a fund for sick paupers.

He intended to have applied again for further aid, but was given to understand by his friends that the state of the public finances were such as would not allow of any considerable bounties for public purposes.

Still, confident in the merits of his Institution, he looked forward to receive the public aid, and offered, so long as he should be deemed worthy of it, to give his services and attendance gratis "to that most noble charitable institution, the Lying-in Hospital."

His future applications to Parliament appear to have been unsuccessful, for on the 3rd of November, 1783, he presented a petition to Parliament, setting forth that, by his disappointment from the House in 1779, he had been reduced to bankruptcy, but that he since paid 20s. in the pound, and praying relief for his expenses in preparing a Dispensary for the poor.

The Report of the committee to whom the petition was referred was favourable, but no vote appears to have resulted from it, and we hear no more of Mr. Wade except that the name of John Wade and John Clarke, both of Capel-street,

“Chymists,” are signed to a petition presented to Parliament in 1790, from some physicians, surgeons, chemists, druggists, and apothecaries of Dublin, praying that all might participate in the establishment of the Hall, and that it should not be confined to apothecaries.

I have alluded to the establishment of this institution because it appears to have been the first of its kind in Ireland ; secondly, because its founder appears to have been one of those devoted philanthropists whose memory should not be allowed to lapse into oblivion ; and thirdly, because, from the reasons given for its establishment, we learn something of the state of the Dublin drug-market at that time, and can the better appreciate the improvements which have since taken place.

In 1768 the Corporation of Apothecaries presented Dr. Lucas with an address of thanks for his diligence and attention in the House of Commons, and for his zeal and spirited conduct, which they considered to have been mainly instrumental in obtaining a law for limiting the duration of Parliament ; and, as a testimony of their esteem for his public and professional conduct, they voted him his freedom in a silver box.

Mr. John Giffard obtained his freedom in the October of the same year, and in 1771 he was elected one of the wardens.

We now come to the termination of Dr. Lucas’s active career, for we find the corporation assembled on a special summons, 3rd of February, 1772, to appoint a committee to confer with the other corporations relative to the erection of a suitable statue or monument to his memory. This statue is now in the Royal Exchange.

Dr. Lucas was a member of the corporation of barber-surgeons, and his autograph appears frequently in their Transaction Books.

It seems strange that the House of Commons should have met on Christmas Day, yet, from the Journals of the House, it appears that on the 25th of December, 1773, leave was given to bring in a Bill for the better regulating the profession and

practice of chirurgery in Ireland; on the 18th of the following month Surgeon Croker laid the heads of the Bill before the corporation of apothecaries. The Bill was not brought in at that time, but a similar one was introduced in 1775, which, however, was not persevered with.

In June, 1775, Mr. Giffard brought forward a scheme for an application to Parliament for the better regulation of pharmacy in Dublin(*a*).

In the following November a petition was presented to Parliament from John Clarke(*b*), stating that, in consequence of the difficulty in procuring pure chemicals for medical use, he had, at much expense, brought their manufacture to great perfection; that in four years he had made 16,000 lbs. of magnesia alba, in all respects equal to what had been imported at a guinea a pound, and had reduced the price so much that even the consumer did not then pay more than one-third that amount for it; that he had reduced Rochelle salt to one-fourth its former price, and prepared 12,000 lbs. of it; and that, notwithstanding the heavy duty, he had established a considerable export trade to Bristol and London, thus opening a new branch of commerce; and praying the House to assist him in erecting an "apparatus for preparing sal ammoniac and several other articles, for which large sums were annually sent to Italy and Holland."

The committee, to whom the petition had been referred, reported that he had fully proved his allegation, and that he deserved the aid of Parliament.

June 26, 1777. The corporation rescinded an order of March, 1750, by which none but actually practising apothecaries

(*a*) In this year a poem entitled *The Medical Review* was published by Dr. Gilborne, which throws some light upon the relative positions of the three branches of the medical profession at that time. From it we learn that the physicians of Dublin, seventy years ago, thought that the apothecaries were trenching upon their practice. See p. 62.

(*b*) The late Daniel Moore, whose death was recorded in the February Number of this Journal, was nephew and apprentice of Mr. Clarke.

caries were to be members of the guild; the same day they admitted Dr. Mac Bride as an honorary brother; his freedom was presented to him in a silver box with the following inscription: "To Dr. David Mac Bride, from the corporation of apothecaries, as a mark of their esteem." The Rev. James Hastings was admitted and appointed chaplain(a). Dr. Frederick Jebb had his honorary freedom presented in a silver box.

A bill was brought into the House of Commons in March, 1778, for the improvement of surgery, by separating the surgeons of this city from the corporation of barber-surgeons, and making them two corporations. The rising reputation of surgery had doubtless rendered this union incongruous. This bill was not persevered with, but on the 11th of February, 1784, the principal surgeons of Dublin were, by royal charter, incorporated as the Royal College of Surgeons in Ireland, a body which rapidly rose to the high position it at present occupies.

Some Acts of Parliament were passed about this time, which, as they affect the apothecary, should be noticed here.

By 17, 18 Geo. III. c. 28, s. 1(b), it was enacted that justices of the peace be empowered to appoint an experienced surgeon or apothecary, at a stated salary, not exceeding £10 per annum, to attend each gaol or prison, who shall be directed to report to the justices by whom he is appointed, at each Quarter Sessions, the state of health of the prisoners under his care.

By 26 Geo. III. c. 14, s. 13, any sum not exceeding £15 is allowed to the apothecary for his attending the prisoners and providing medicines for them.

By 26 Geo. III. c. 27, s. 1, a clergyman, surgeon, physician, or apothecary, may be appointed inspector of a gaol, bridewell, or house of correction.

At a meeting held in March, 1783, a resolution was agreed

(a) Rev. Dr. M'Donnell had been appointed chaplain in 1763.

(b) An Act for preserving the Health of Prisoners in Gaol, and preventing the Gaol Distemper.

to and signed by fifty-five(*a*) apothecaries practising in Dublin, whose names are given in the corporation book, not to employ any assistant who had not served five years.

October 2, 1783. A memorial from the Pharmaceutic Society(*b*) to the corporation was presented, relative to the grievances under which the professional business of an apothecary laboured, particularly as to the inadequate remuneration for professional trouble and attendance in country parts.

A committee was appointed to take the memorial into their consideration, and to report on the next quarter-day, when a number of resolutions were passed, and a scale of charges fixed upon.

In compliance with a request conveyed in a letter received from the College of Physicians, the corporation, in December, 1787, selected four of their members to act as assistants to the committee appointed by the College to prepare a Pharmacopœia Dublinensis(*c*).

19th October, 1789, John Ussher having been elected master, Messrs. Dalton and Daniel Moore, wardens, a proposal was brought forward to establish a Hall in Dublin, on a plan similar to that instituted by the London apothecaries. In

(*a*) There are at present about 120 practising apothecaries in Dublin.

(*b*) I have not been able to discover the Annals of this Society.

(*c*) The idea of preparing a Dispensatory for the use of this kingdom was first proposed to the College in 1717-18 by Dr. Cumyng, and several meetings were held on the subject; in 1721 a resolution was passed to recommend the apothecaries of Dublin to use the last London Dispensatory until one for Dublin could be perfected; in 1746, the College published a Dublin edition of the London Dispensatory of 1745; in 1784 a committee was appointed, who, in 1788, took the new London Pharmacopœia as their groundwork; in 1791, some copies of the Pharmacopœia Dublinensis were privately circulated; in 1794, 100 copies of a specimen were distributed among the fellows and licentiates of the College, the heads of the College of Surgeons, the Corporation of Apothecaries, and Apothecaries' Hall; in 1805, copies of another specimen were sent to each member; in 1807, the first Dublin Pharmacopœia appeared; in 1826, a second was published; and a third is now (1848) in preparation.

January it was resolved to confer with the College of Physicians as to the utility of the measure; and in the following month leave was given by the House of Commons to introduce a Bill for the purpose. Pending this measure a committee of seven was appointed to examine persons seeking to become assistants or apprentices.

In April, 1790, Dr. Percival, Professor of Chemistry in the University, was admitted an honorary member.

Several physicians, surgeons, apothecaries, chemists, and druggists, had petitioned Parliament to allow all to participate in the formation of the Hall; and a counter-petition was presented by the corporation, praying, for various reasons, that all except apothecaries might be excluded; but in answer to a memorial from the externs, they expressed their willingness to admit as subscribers on equal terms those who were not free of the corporation, provided the privilege should be restricted to apothecaries. The counter-petition of the corporation having been submitted to the committee on the state of pharmacy, they reported that the establishment of a Hall, to consist of practising apothecaries only, would be a measure of great public utility, and that the examination of candidates should be vested in the directors appointed by the proprietors.

A general meeting was held in February, at which thirty-seven members were present: Henry Hunt, of Henry-street, was elected to be named in the Bill as first governor; Anthony Thompson, as first deputy-governor; John Ussher, of Dame-street, was appointed treasurer; and Daniel Moore, of Grafton-street, secretary. It was also resolved to seek the introduction of a clause in the Bill to relieve the profession from attendance upon juries, but this attempt, if made, was unsuccessful(*a*).

(*a*) A remarkable difference existed until lately, in this respect, between the law in England and Ireland. In England members of the College of Physicians and Surgeons, and apothecaries who had served an apprenticeship for seven years, were, by 6 & 7 Will. III., 1694 (made perpetual in the 9 Geo. I.), exempted from serving upon juries, and from filling parish and

The Bill was introduced in March, and, having received the Royal assent, came into operation on the 24th June, 1791. The corporation of Apothecaries' Hall was to consist of a governor, deputy-governor, thirteen directors (elected annually on 1st August), and others, subscribers of £100 each; with the proviso that the company should not at any one time consist of more than sixty members, who were to be either "judicious apothecaries," resident in the city, liberties, or suburbs of Dublin, or persons who had been so for seven years. Every member to be sworn before voting at any general court. Officers, agents, and servants to be sworn. No apprentice, foreman, or shopman to be taken by any apothecary until he be examined by the governors and directors, of whom five to be a quorum; if rejected, the candidate cannot be examined again for six months; and if rejected a second time, he can appeal, within ten days, to the general court, i. e. the subscribers at large, of whom fifteen to be a quorum. In like manner persons are to be examined before opening shop or acting as apothecaries, and these have a like power of appeal. If the candidate be rejected three times, he can appeal to the College of Physicians, who are empowered to affirm or reverse the decision of the examiners. Ten shillings to be charged for the certificate to open shop, and five shillings for one to become an assistant or apprentice. No apothecary to take an apprentice for less than seven years, nor to keep arsenic, oils, or colours where medicines are compounded(*a*).

ward offices; but no such law existed in Ireland. Members of the College of Physicians and Surgeons in Ireland have, by their respective charters, privileges similar to those conferred by Statute on the profession in England, and they and "all apothecaries certificated by the Court of Examiners of the Apothecaries' Hall, Dublin," are, by 3 & 4 Will. IV. c. 91, exempted from serving upon juries. In Ireland, therefore, apothecaries, with the exception of the officers of the corporation of 1745, are still liable to serve as churchwardens and to fill other parish offices.

(*a*) 31 Geo. III. c. 34. "An Act for the more effectually preserving the Health of His Majesty's Subjects, for erecting an Apothecaries' Hall in the

The first general meeting of the subscribers after the passing of the Act of Incorporation, was held at the Surgeons' Theatre in Mercer-street; the oaths directed by the Act having been taken, a vote of thanks was passed to the Royal College of Surgeons for granting the corporation permission to meet at their theatre until a proper Hall should be provided. On the 28th May a committee was appointed to consider the best mode of conducting the examinations of apprentices, assistants, and apothecaries, and to prepare a seal for the company, with the motto, "To preserve health and improve pharmacy."

Having thus endeavoured to sketch the history of pharmacy in Ireland, from its origin as a distinct branch of medicine, to the establishment of the body which now presides over it, I shall close this paper by alluding to a curious coincidence, which looks back, as it were, on the times of which I have been speaking, namely, that the school of the Hall, erected some years since in Cecilia-street, stands upon the ground occupied in 1684 by the Dublin Philosophical Society, when, according to Mr. William Molyneux(*a*), they had "a fair room in Crow's Nest, off Dame-street, which belongs to one Wetherel, an apothecary, where we have a fair garden for plants," and where the Society, it appears, built a laboratory. Having been subsequently for a time devoted to the dramatic Muse, this locality has, in a measure, returned to its original use,—a laboratory again stands where Thalia reigned, and the site belongs not to one, but to many apothecaries.

While the foregoing was passing through the Press I found in Farr's Medical Annual (1839) some observations which may illustrate the admission of "women as well as men," to the fra-

City of Dublin, and regulating the Profession of an Apothecary throughout the Kingdom of Ireland."

(*a*) See the Editor's preface to the New Series of this journal, p. xii. I would also direct the reader's attention to Dr. Gray's "Report on the Bill for Regulating the Profession of Physic and Surgery, with Observations on Medical Education." Dublin, Browne, 1845.

ternity of barber-surgeons, under the charters of Henry, Elizabeth, and James. In a History of the Medical Profession, published in that work, the writer, having shown from Tacitus^(a) that among the ancient Germans the women followed the armies to the field, and dressed the wounds of the combatants, “Ad matres, ad conjuges vulnera ferunt; nec illæ numerare aut exigere plagas pavent,” remarks that “the ladies sustain the fame of their German mothers, and figure not unfrequently as surgeons in the romances of the twelfth and thirteenth centuries, as well as in the poems of Ariosto, Tasso, Spenser, and later bards. The following passage occurs in *Ywaine and Gawin*, written in the reign of Richard II.:

“ ‘ Twa maydens with him thai laft,
That wele war lered of lechecraft;
The lordes doghters both thai wore
That war left to kepe hym thore,
Thai heled him everilka wound.’ ”^(b)

Again, in the celebrated *Morte d'Arthur*, we read that the knight, Sir Tristram, having been sorely wounded with a poisoned spear, King Marke sent “after alle manere of leches and surgens, bothe vnto men and wymmen, and there was none that wold behote hym the lyf.” A wise lady at last came, and declared that the knight would never be whole till he visited the country whence the venom came, when he should be healed, or else never^(c). His antagonist having been an Irish knight, he, in pursuance of this advice, repaired to Ireland, where “Kynge Anguysshe for grete fauoure maade Tramtryst to be put in his doughter's ward and kepyng, by cause *she was a noble surgeon*. And whan she had serched hym she fond in the bottome of his wound that therin was poyson, and soo she heled hym within a whyle, and therfore Tramtryst cast

(a) *De Moribus Germaniæ*, c. vii.

(b) *Ancient English Metrical Romances*, edited by J. Ritson, p. 115.

(c) *Morte d'Arthur*, ed. 1817, by Southey, p. 258.

grete loue to la beale Isoud, for she was at that tyme the fairest mayde and lady of the worlde.”(a)

“Surgery,” adds the same writer “was a part of female education in the days of Queen Elizabeth(b); and down to a late period the recipes of cookery and physic were consulted by the provident housewife in the same volume.”

ART. IV.—*Observations on the Structure of the Vitreous Humour.*

By WILLIAM BOWMAN, F. R. S., F. R. C. S. E., Assistant Surgeon to King's College Hospital, and the Royal London Ophthalmic Hospital, &c. &c.

DURING the last few years considerable attention has been given in Germany to the anatomical structure of the vitreous body. This part has been hitherto loosely held to consist of an extremely delicate filamentous tissue, so interlaced as to inclose cellular spaces, in which the water was supposed to be retained, which slowly escaped when the hyaloid investment was punctured. Not that any anatomist had seen these filaments or cells, but their existence was deduced from the fragmentary form taken by the contained water when frozen, particularly as it afforded a plausible explanation of the more obvious properties of the structure, by a fancied analogy with common areolar tissue. When, however, more perfect means of investigation came to be applied without success to the detection of this filamentary substratum, there was room for new researches of a different kind, with a view to the discovery of some other structural cause of the curious and very peculiar physical properties exhibited by the fresh and healthy vitreous body. Pappenheim appears to have been the first to call attention to the fact that evidence may be obtained of an internal artificial arrangement of parts. He announced that the vitreous

(a) B. viii. c. ix. p. 259.

(b) Harrison, in the Introduction to Holinshed's Chronicle.

body, treated with a solution of carbonate of potass, exhibited a succession of concentric layers, something like those of an onion(*a*). Brücke, in the following year(*b*), pursued this hint, imagining that there might exist in the substance of the vitreous body a series of membranes capable of anatomical demonstration; and he thought it probable that, by steeping the humour in a solution which would furnish a precipitate as it permeated the vitreous substance, these membranes might arrest the precipitate, and thus become apparent to the eye. He accordingly exposed the surface of the vitreous in a sheep's eye, by removing the sclerotic, choroid, and retina, about as far forward as the ora serrata, and placed it in a concentrated solution of acetate of lead. The surface became immediately covered with a white crust, and when, after some hours, he cut a small slice from the hinder region, he found the cut surface marked with fine milk-white lines, running parallel to the original surface, and presenting throughout the appearance of a finely striped agate. He soon satisfied himself that these stripes proceeded from milk-white layers traversing the vitreous substance in such-wise that the outermost was almost parallel to the retina or hyaloid, and the innermost to the back of the crystalline lens; the intervals being consequently greatest in the axis of the eye, and least towards the zone of Zinn. Here the outer layers were closely approximated, and terminated by uniting with that portion of the hyaloid which lies against the zone; but as respects the middle and inner layers, he was unable to satisfy himself how they ended. Proceeding onwards, he examined the texture of these layers. With the naked eye or an ordinary lens they appeared simply to consist of a milky, transparent membrane, but with a higher magnifying power a fine granular precipitate (probably chloride of lead) became visible in the position of the white lines, and in their intervals either a perfectly transparent space, or else a smaller quantity of a more

(*a*) *Specielle Gewebelehre des Auges*, Breslau, 1842, s. 182.

(*b*) *Müller's Archiv.*, 1843, s. 346.

delicate and similar granular deposit. Brücke further observed that the vitreous body thus prepared tore most easily in the direction of these layers; and he noticed that the transparent spaces between the white layers were occupied by an apparently gelatinous mass, similar in constitution to the rest, and were not free spaces containing fluid. He offered no explanation why the aqueous fluid of the vitreous escapes so readily on a puncture, which, he rightly remarks, never happens from a true jelly.

In a subsequent communication(*a*) the same anatomist observes, that the frozen vitreous body, far from affording ground for the idea of a cellular constitution, in reality accords with, and even favours that which he had previously advocated, viz., that the vitreous body is made up of concentric membranes, enclosed one within another. He states that if a well-frozen eye be brought into a warm room, so as to thaw the tunics investing the vitreous, and if these be then carefully removed, the frozen vitreous body appears as a coherent mass of ice, from the surface of which minute flakes may be detached with the point of a scalpel, as the external warmth gradually acts upon it. These flakes he has traced to near the lens, and as they seem to him to have the same direction as those exhibited by the aid of the metallic salt, he concludes that they are the result of the same membraneous stratification which he had before demonstrated.

Another distinguished physiologist has also devoted a paper to this interesting subject(*b*). He made his observations on the eyes of mammalia, after immersing them for at least six months in a solution of chromic acid. He describes somewhat more particularly the concentric layers which had been noticed by the previous authors, and states that if the eye be divided by a median transverse section the appearance is that of an onion

(*a*) *Müller's Archiv.*, 1845, s. 130.

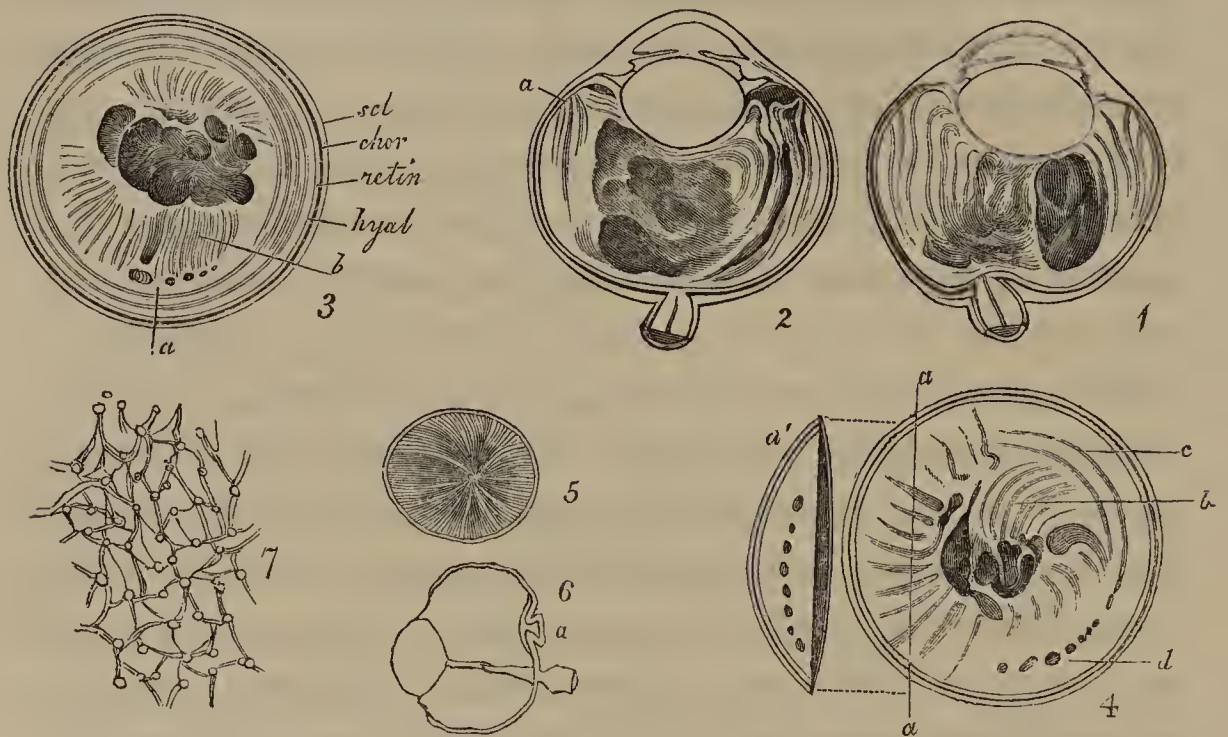
(*b*) *Hannover, Entdeckung des Baues des Glaskörpers, Müller's Archiv.*, 1845.

similarly cut; and this he finds in the cat, dog, ox, and sheep. But in *man* he says that a different structure obtains, rudely comparable to that of an orange, there being segments, of which the convexities are turned outwards, while the angles converge towards, but do not reach the axis of the eye, where the hyaloid canal exists in infants. In two specimens Hannover was able to count 180 rays, and he therefore concludes upon that number of segments: he was unable to ascertain whether each segment had its proper containing membrane, or whether a single membrane was common to two contiguous segments. Examined with the microscope, he finds the walls of the segments to present the aspect of transparent membrane without structure, covered with numberless granules, which he thinks are probably the result of a precipitation. He concludes with an account of the exact arrangement of the parts about the zone of Zinn, into which it is unnecessary here to follow him.

As I am not aware that these researches have been at all prosecuted as yet by any anatomist in this country, and as it seems probable from my own investigations that much difference of opinion is likely to exist with regard to the true interpretation of the appearances which have been above briefly described, I am desirous to communicate in a simple form the result of my own observations on the vitreous humour of man and other mammalia, and of birds and fishes. In doing so I am very sensible how much is still wanted to render them complete.

Having more than a year ago placed several *human* eyes, as fresh as possible (i. e. within twenty-four hours after death), and which had been removed from the orbits with special care, to avoid compression of the humours, in dilute solution of chromic acid (the strength indicated by a light straw colour), I soon found them to have become distended and tense, and the outer coat hardened, and I recently made sections of them in various directions, with a very sharp knife, taking care in making the sections that the globes were not squeezed or cut

unevenly. The best marked examples are delineated in figs. 1 to 7(a).



The vitreous body in all was rendered semi-opaque throughout, but the opacity was more obvious and decided in some

(a) Sections of the human vitreous body, made after being immersed for upwards of a year in weak solution of chromic acid. Immersion commenced within twenty-four hours after death, and every care being taken to avoid injury.

Fig. 1.—Horizontal section of the globe. The dark lines in the figure indicate the situation of the white lines in the preparation; in the centre is an irregular cavity.

Fig. 2.—Vertical antero-posterior section of the globe; *a*, white lines running up to the hyaloid at the ora serrata.

Fig. 3.—Vertical transverse section of the globe, anterior half seen from behind. Within the hyaloid concentric light and dark lines are seen; within these, at *a*, are several dark dots, which are tubular spaces cut across, which dip inwards and approach the central irregular cavity in a curved course. The radiating lines, *b*, are dark in the preparation, and the substance is not interrupted where they occur, as far as I could ascertain.

Fig. 4.—Similar section from another eye; posterior half seen from the front. In this figure the shaded parts indicate the darker parts of the preparation; in the centre is an irregular cavity; from this or its vicinity, radiate many lines, most of which are tubular, as I proved by subsequently

directions. Most of the sections dividing the eye into an anterior and posterior half (figs. 3, 4) exhibited faint lines of greater opacity, parallel to the retina, running partly or altogether round the section. These lines were more opaque when the observer looked at them in certain directions, and with a little care it was easy to see that they were the edges of opaque lamellæ which followed the curvature of the retina. In no case did these circular lines extend more than about one-third of the way from the retina to the centre of the vitreous, and when they ceased they were replaced by others of a straight or slightly waved character, which had more or less of a convergent direction towards the centre. In the centre, in all the specimens, was an irregular cavity of variable size apparently formed by breaking up of the tissue. In some specimens,

carrying a second section, *á*, through *a a*. The cause of what a geologist would call the unconformable arrangement of the lines at *b*, I cannot account for : the knife evidently has not produced them. At *c* is a dark line, the cut edge of a layer of the vitreous which has not been whitened like the rest, and which is concentric with the retina ; tracing this towards *d* we come to a number of tubes cut across, dipping inwards in a continuation of the same plane.

Fig. 5.—Vertical transverse section of the vitreous humour of a nine months' human foetus, after immersion for a year in a dilute solution of chromic acid. The hyaloid canal is seen near the centre ; and a very obvious radiation of somewhat curved lines from the wall of that canal : the texture was apt to tear in the direction of these lines.

Fig. 6.—Horizontal section of the retina, vitreous humour, and lens of a nine months' foetal eye, similarly treated. The section is carried through the optic nerve, spot of Sæmmerring, hyaloid canal, and lens : the vitreous humour exhibited an uniform opacity in this section. The spot of Sæmmerring is represented at *a*, where the retina is seen to recede from the vitreous body, and form a follicular pouch with a narrow neck, over which the hyaloid passes without entering ; the hyaloid canal has been cut open in its hinder half, while the anterior portion remains tubular on the very surface of the preparation. No stem from the extremity of the optic nerve entering the canal can be distinguished in the actual specimen.

Fig. 7.—Fragment of the vitreous substance of the same eye, seen under a power of 300 diameters.

where the circular lines were deficient, more transparent lines of from one-twentieth to one-eightieth of an inch wide, traversed the otherwise homogeneous substance, from the central cavity or its vicinity towards or even up to the hyaloid. These were straight or slightly curved, and of unequal width, and were proved to be tubular channels by cutting them across, when their orifices became clearly visible. In one specimen there were nearly twenty of these near the surface of the section, and in all probability many more too deep for view. Other tubular spaces were seen in one case (fig. 4 *d*) passing in the curve of the concentric layers.

In the sections carried through the optic nerve and lens, and dividing the eye into an upper and lower, or into two lateral halves (figs. 1, 2), a few lines of greater opacity were seen, preserving a more or less exact parallelism with the cut edge of the retina, and obviously the edges of laminae more opaque than the rest. A very slight touch with a pin sufficed to tear the vitreous in the direction of these lines, and to convert the laminae into separate sheets, and this has been done to a slight extent in one of the specimens figured (fig. 2). In these specimens the broken central cavity comes so near the optic nerve that the layers are hardly to be seen there, but in front their disposition is not doubtful. Several, and those the outer ones, run towards the ciliary body, and there seem to approach the very surface of the vitreous near the ora serrata, probably uniting with the hyaloid in contact with the zone of Zinn, as described by Brücke. Then those next within bend inwards towards the margin and back of the lens, of course behind the canal of Petit, and they appear rather to cease in succession at the surface of the lens than to be continued concentrically behind it, though on this point the preparations do not speak positively. Between the layers that pass towards the ora serrata and those inclining to the lens the texture seems less coherent, for in some of the specimens the central cavity has spread here and there in this direction, so as even to reach

the ciliary processes and expose them to view from behind, when the cavity is laid open by a vertical transverse incision.

Viewed with a high power these specimens exhibit no special texture; nothing but a finely granular mass appears, which is merely rather darker and more obscure where the naked eye detects the opaque lines. No definite streak bounds the light and dark spaces; there is no evidence of a true membrane discoverable by the microscope within the hyaloid: as far as we can see, the light and dark layers have the same amorphous structure.

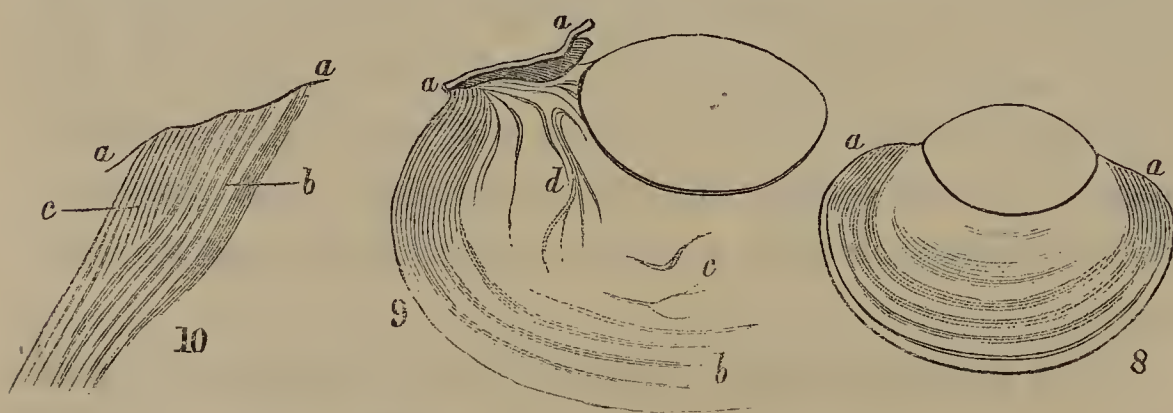
Among the human eyes were those of a still-born foetus. The vertical transverse section of one of them is represented in fig. 5, to the description of which the reader is referred. It seems to accord with the observations of Hannover. No vestige of layers concentric with the retina was to be found in this or the other eye. The other was cut horizontally, and the knife, fortunately, passed through the optic nerve, spot of Sæmmerring, and hyaloid canal, so as to show all these at once. The description of fig. 6 contains what was observed on this section. That there was no streakiness, no radiating lines in this section, is favourable (taken in conjunction with the appearance of the other section) to Hannover's view of segments or their plates radiating from the central axis. If they really exist, they would probably be invisible in the horizontal section, or in any antero-posterior section running along the axis, because they would be then seen flat-wise, whereas they would be presented edgewise in a transverse section.

With a power of 300 diameters these specimens of the vitreous show a very well-marked but peculiar fibrous texture (fig. 7), not at all unlike that of the enamel pulp described by Dr. Todd and myself(*a*). The fibres join in numerous points,

(*a*) *Physiological Anatomy*, vol. ii. p. 175.

at which are minute nuclear granules, resembling oil-particles, but not soluble in ether.

Having repeated the experiments of Brücke by immersing the vitreous body of several animals in a strong solution of diacetate of lead, I am enabled to corroborate the accuracy of his descriptions, though not the deductions he has drawn from the phenomena observed. I followed his directions by removing from the fresh eyes of the sheep, lamb, and ox, the sclerotic, choroid, and retina, as far forwards as the ora serrata, using the utmost care to avoid rupture or injury of any kind to the vitreous body: the eyes were then placed in the metallic solution. The hyaloid surface immediately became milky, from precipitation of the lead, and in the course of a short time it was of a dead white, and the vitreous humour began gradually to diminish in size. Some of the specimens were cut into after a few hours' immersion, while others were allowed to remain forty-eight hours in the solution. The time elapsing before the sections were made had no influence on the changes wrought within, except as regards the depth to which they had reached, and the result may therefore be given in a few words. However the vitreous was cut into, white lines were seen on the cut surface, parallel to the exterior; these lines were, there-



fore, the divided edges of white layers concentric with that surface(*a*).

(*a*) *Fig. 8.*—The vitreous and lens cut through their centres in the eye of a lamb which had been steeped for five hours in a solution of diacetate of lead,

In exact accordance with Brücke's account, I found the white lines in the hinder and lateral parts more intense, further asunder, and fewer in number, than in the region of the ciliary body, where they were very fine, delicate, and closely arranged, so as hardly to be visible without the aid of a pocket-glass (see fig. 8). The difficulty of making a clean section at this part, even with a sharp knife, in consequence of the tendency of the structure to be drawn before the blade, caused some uncertainty with regard to the ultimate destination of these lines in the ciliary region. However, after examination of many specimens, I was enabled to feel assured that they passed up to the hyaloid at or in front of the ora serrata, and did not pass round at the back of the lens, in parallelism with the anterior surface of the vitreous body. This being the general arrangement, I noticed in some specimens, of which fig. 9 was the best marked, white layers of irregular character behind the lens at *c*, and others obviously dipping backwards from the side of the lens, behind the canal of Petit, into the central portion of the vitreous, and there breaking up into finer layers, *d*. Others,

after the tunics had been removed from the hyaloid as far forward as the ora serrata. At *a a* the lines are very fine and close, and should be fifteen or twenty in number, and only visible with a lens. The ciliary body is not represented.

Fig. 9.—Eye of an ox. Tunics, removed so as to expose the hyaloid as far forwards as the ora serrata, then immersed in solution of diacetate of lead for forty-eight hours, and cut with a very sharp knife through the centre. *a a*, ciliary body in section; at *b* the dense white lines are thick and wide apart; at *c* are indications of irregular layers of precipitate; at *d* is a white lamella passing from near the lens and subdividing in the substance of the vitreous body. Very close and fine lines run from the hinder part of the ciliary body, or rather from the hyaloid, towards the coarse lines behind; others approach the lens behind the canal of Petit.

Fig. 10.—From the sheep, prepared as fig. 9, drawn on a magnified scale. The fine lines of precipitate in the vitreous opposite the ciliary body: *a a*, hyaloid in contact with the ciliary body; *b*, light and dark lines, each $\frac{1}{600}$ of an inch wide; *c*, still finer lines, which in this specimen were not parallel to those at *b*.

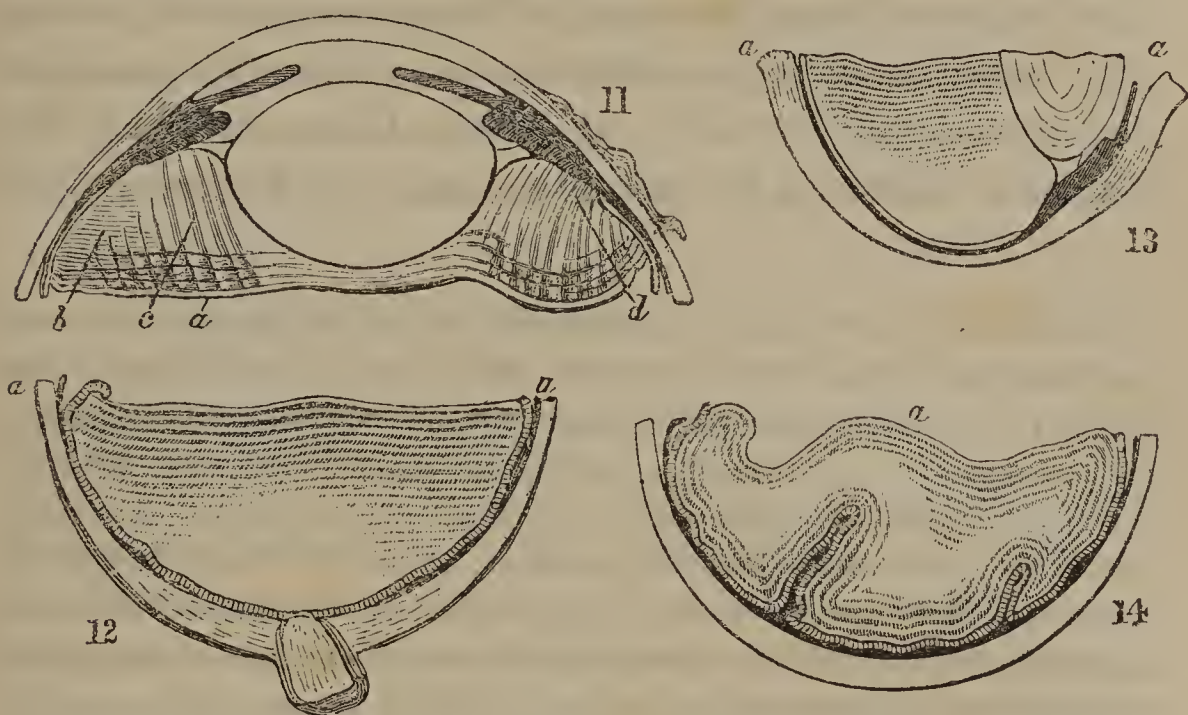
again, followed the posterior wall of the canal of Petit from the ciliary body to the lens. It will be observed that the layer marked *d* corresponds nearly in direction with those which diverge from the ciliary body, and run up to the lens in figs. 1 and 2 from the human eye. In one section through the close and fine lines near the ora serrata I found the appearance delineated in fig. 10, where the lines *c* are inclined at an angle to those at *b*. In the specimens thus prepared there was usually a disposition to tear in the direction of the white lines, especially behind, where the lines were more opaque and wider apart.

There can be no doubt that the white layers now described are composed of a precipitate of the lead. Examined with a high power the grains of precipitate are obvious enough. They are scattered irregularly in the transparent tissue of the vitreous wherever the solution has penetrated, but in the white layers they are infinitely more abundant. Still no sudden bounding line can be distinguished which would warrant the belief that any membrane like the basement membrane of other parts had intercepted the precipitate. In some parts the grains of the precipitate had arranged themselves on the surface of the more opaque layers in something of an areolar form.

It is easy to understand how an accumulation of a multitude of precipitated particles in a certain plane would, so far as their presence extended, serve to break up the continuity and strength of the vitreous substance in that direction; therefore the splitting or tearing of the tissue along such lines adds nothing to the evidence afforded by the simple deposit of the precipitate for the existence of real lamellæ in the original tissue.

Feeling uncertain whether the layers of precipitate thus parallel to the surface exposed to the salt might not be due to some purely physical cause, I procured some perfectly fresh eyes of oxen and sheep, and, before immersing them in the solution of the diacetate of lead, divided them right across with a very sharp instrument, with the greatest care to avoid dragging

or disturbing the texture of the vitreous humour. Some were divided horizontally, and others into an anterior and posterior half. The halves were then placed in the diacetate for forty-eight hours, some with the vitreous upwards, others downwards. When examined at the end of that time, the cut surface of the vitreous, which had been in contact with the salt, was of a dense white, like that of the uncut surface in the former experiments, and on making an incision into it, white lines were found running parallel with it, just as they had been found running parallel with the uncut surface. To make this more apparent I have added some figures(*a*).



The descriptions appended to these figures will explain the points they are intended to illustrate. The conclusion they

(*a*) *Fig. 11.*—From the ox. This eye was cut vertically into an anterior and posterior half. The anterior half, having lain forty-eight hours in diacetate of lead solution, was divided so as to show the surface delineated. *a*, the line of section previous to immersion in the salt,—parallel to this are several lines of white precipitate, coarse and far apart; *b*, other lines of precipitate, also parallel to the surface which has been exposed to the fluid, but finer and closer; *c*, dense lines of precipitate, taking a different direction, and crossing the others; *d*, similar lines, which seem to run up to the ciliary body, and to be attached there: all the lines indicate cut edges of lamellæ.

Fig. 12.—The eye of an ox, cut into an anterior and posterior half,

lead to is this: that the very beautiful and very elegant layers produced in the vitreous substance by immersion in the salt of lead do not depend on any corresponding series of anatomical membranes, but are due to a physical cause, which will probably be explained more easily by the physico-chemical inquirer than by the anatomist. At first sight, indeed, they seem not to admit of explanation by any of the known laws of imbibition and transmission of fluids through porous substances; and some of my friends well versed in those laws were not able to offer even a probable explanation, when I showed them the preparations. The difference in the closeness of the layers in the hinder region of the vitreous, and in front near the ciliary body, may depend on some real difference in regard to closeness, or compactness, or permeability, or chemical constitution of the vitreous substance in the two situations. Or it may possibly

and the latter then immersed in diacetate of lead for forty-eight hours, and afterwards cut horizontally through the optic nerve, exposing the surface depicted. The knife has passed through many successive planes of precipitate, parallel to the cut surface, *aa*, which has been in contact with the salt.

Fig. 13.—From the sheep. This eye was first cut through vertically from front to back, and the halves separately immersed in solution of diacetate of lead for forty-eight hours; a new section of the outer half was now made horizontally, dividing it into quarters; one of the new surfaces thus exposed is here represented, *aa* being the line of the first cut previous to immersion; the vitreous exhibits numerous fine and close lines, which are the cut edges of layers of precipitate, parallel to the surface which has been in contact with the salt; they gradually diminish in distinctness inwards.

Fig. 14.—The posterior half was cut from the eye of an ox and immersed in diacetate of lead for forty-eight hours. The cut surface of the vitreous humour, when whitened by the salt, was seen to be very irregular as if it had been dragged in making the section; when the specimen was divided again through the centre, so as to expose the surface delineated, the retina was seen thrown into deep folds, obviously in making the former cut; the lines of precipitate were parallel to the retina thus folded, and also to the irregular surface *a*, which had been made by the former cut. By the loosening of the retina from the choroid in the specimen, the fluid had probably found its way nearly equally to the whole surface of the vitreous mass immersed in it.

depend on the different access of the solution to the two parts. But however such variations may be explicable, they are proved, I think, by the last-cited experiments, not to depend on any difference in the number or thickness of actual membranes in the two situations. The fine, close lines in figs. 8 and 9, and the equally fine ones in the same region of fig. 11 *b*, traverse the vitreous substance in directions too dissimilar for us to imagine them to be the exponents of an anatomical lamination; but they are in both cases parallel to the surface previously exposed to the salt.

In his later paper Brücke draws an argument for the existence of the concentric layers as a true structure from the condition of the vitreous when frozen; but in this I confess he appears to me to have been warped by the idea previously in his mind. He says that when the thawing of the frozen mass commences, thin flakes of ice may be picked off from the surface, as though the ice had taken the form of the concentric lamellæ while freezing. For my own part I have been unsuccessful in finding any indication of the concentric flakes in this way. The ice appears to shoot in the substance of the vitreous in a crystalline form, quite irrespective of any structure existing there, and as it melts, layers and angular fragments may be got off it in a variety of directions. I feel sure that the ice never takes the figure of the cup-shaped lamellæ supposed.

I have examined the vitreous humour of the eye of the common fowl after a month's immersion in the solution of chromic acid. After this period of immersion, short as compared with that recommended by Hannover, the vitreous—as shown in the annexed wood-cut, fig. 15(*a*)—was found throughout ren-



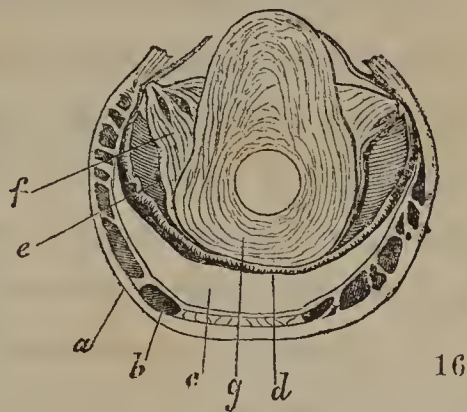
(*a*) *Fig. 15.*—Fresh eye of a common fowl, immersed during three weeks in dilute solution of chromic acid; section carried obliquely through, and parallel to, the plates of the pecten; striæ are seen proceeding from the summit of the pecten, chiefly towards the ciliary body, but also towards the lens; others appear to pass from the ciliary body towards the lens.

dered slightly opaque; no concentric lamellæ or layers, in any respect parallel to each other, were discovered, but a very evident arrangement of more opaque fibres was seen extending chiefly from the summit of the pecten towards the ora serrata, and a few towards the lens, while others stretched from the ciliary body to the side of the lens. On attempting to break down the vitreous substance it tore by preference along these fibres, so as to leave them dissected and isolated, and they manifested a certain elasticity. The sides of the pecten also appeared to give off a few fibres, but only in one or two situations. In the bird's eye I found that the vitreous had always undergone partial collapse, and so become separated from the retina during the immersion in the solution. It still, however, adhered to the surface of the pecten and to the ciliary body and lens. A thin exterior layer of the lens was hard and opaque, while all within retained its perfectly fresh characters.

I also placed several eyes of fishes in the same solution of chromic acid, some entire, others with the cornea carefully removed, in order to permit a freer and readier access of the acid, to the vitreous substance. In the former I found, after a month, that the interior parts had not been reached by the acid and that they were destroyed by decomposition. In the others, all the textures were preserved, and in making a section in the axis, the following appearances were observed in the vitreous humour. It passed in layers from the region of the ora serrata to the side and back of the lens. The layers diverged to reach their several destinations, and here and there open spaces between them were cut through, which, though possibly the result of the mode of preparation, yet showed the tendency of the structure to split in the direction of the layers. The lamination of the structure was exceedingly evident. Some of the anterior layers, instead of proceeding from the junction of the choroid and iris, which in this eye corresponds with the anterior border of the retina, were derived at successive distances from the suspensory ligament of the lens, which bounds the

vitreous in front, extending from the junction of the choroid and the iris to the side of the lens. The explanation of fig. 16, here represented, will further interpret the appearance(*a*).

The researches now described have not been numerous or varied enough to satisfy me with regard to many points which it is still desirable to clear up; but they will serve, I think, to place in its true light the remarkable phenomenon on which Brücke has founded his



view of a very complex and artificial construction of the vitreous body. If I may venture to deduce a conclusion from the experiments I have detailed, I would say that the construction he has described is not in the least supported by the experiments with the salt of lead, which may be made to indicate a lamination in any direction at the pleasure of the anatomist; but, nevertheless, there remains good reason for supposing that there do exist certain layers in the vitreous substance, capable of being rendered visible by art. I think in the sections of the human eye (figs. 1 and 2), the uniformity of the arrangement of the layers disclosed in the neighbourhood of the lens could hardly have been produced, independently of a pre-existing structure, by simple immersion in the chromic acid. The same view is supported to some ex-

(*a*) *Fig. 16.*—Eye of a cod-fish. The cornea was removed, and the eye then immersed in dilute chromic acid for three weeks; a section was then made in the axis of the humour; *a*, sclerotica, within which is a cellular space; *b*, silvery layer; *c*, choroid gland; *d*, pigment and retina; *e*, space between retina and vitreous body, occasioned by the collapse of the latter; *f*, the vitreous body, descending in distinct layers from near the junction of the choroid and iris, and passing to the side and hinder part of the lens; the lens *g*, probably by its weight during the immersion, has pressed out all fluid from the hinder part of the vitreous body, and so, apparently, come into contact with the retina: the hard nucleus of the lens, seen in the centre, is not acted on by the acid; the anterior soft portion has advanced through the pupil.

tent by the appearance of fig. 9, *d*, which could not have been due to a merely physical cause. Then again we have the manifest existence of sets of fibres stretching in determinate directions through the vitreous in the eye of the bird, and the still more decisive lamellated arrangement in the fish, which last affords the most striking and conclusive evidence for the artificial conformation of this exquisitely transparent part that we yet possess. The great solidity and weight of the lens of the fish may, perhaps, be the occasion of this.

It is certainly remarkable that in all specimens of the adult human vitreous humour preserved in chromic acid, a central cavity was discovered on making a section of the eye. Now although this cavity may be regarded as a false appearance, occasioned by the breaking down of the vitreous substance in the central part during the manipulations preceding the immersion in the acid, yet its occurrence in every specimen would seem to indicate that this portion was of a more fragile consistency than the rest, since it is more remote from sources of injury. The cavity could hardly be due to this portion having had time to decompose before being reached by the chromic acid, because the permeation of the whole mass would, probably, be sufficiently rapid to anticipate such a change.

I may observe, in conclusion, that in a case of phlebitic ophthalmitis, in which the vitreous substance was filled by inflammatory exudation corpuscles, the yellow colour derived from the deposit gave no indication of lamellæ, but made exceedingly evident a flattened cavity in the central part of the vitreous humour, capable of containing a pea.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

Females and their Diseases. A Series of Letters to his Class.

By CHARLES D. MEIGS, M. D., Professor of Midwifery and the Diseases of Children in the Jefferson Medical College at Philadelphia. Philadelphia, Lea & Blanchard. 8vo. pp. 700.

THERE are two periods of his life when a medical man may advantageously write a book. The first is at the commencement, whilst waiting for practice, before he has attained the confidence of the public. This is a weary time for a young man, but it may be made most useful to himself and beneficial to the profession, if he possess industry sufficient to pursue definite researches among the records of the science, and judgment and method enough to arrange the results clearly and lay them before the public. Isolated facts, scattered essays, and forgotten monographs, may thus be collected, classified, and estimated, and conclusions drawn of the greatest advantage, before the writer has been able to add anything from his own experience; whilst to himself the interest and occupation thus induced during the most unpleasant period of medical life are invaluable.

Again, at an advanced period of a physician's career, after long experience and ample enjoyment of public confidence, it seems to us a duty to record the results of that experience. If a man enjoys the benefits of a large practice, he ought to have an earnest desire to bequeath to the profession the knowledge he has gained. Book-learning and the instruction derived from practice are so different, that every one who can, is in duty bound to increase our store of the latter. And how highly are such works prized! Who has not read with avidity the works of Holland, Seymour, Graves, Brodie, Colles, Hamilton, &c.?

Such a work is the volume now before us,—the production of a physician of long standing, great experience, and sound judgment. Dr. Meigs is already well known to the profession

by his Philadelphia Practice of Midwifery, and his translation of Colombat de l'Isere on Diseases of Females; and he has now given to the world his own experience on the latter subject. It comes before us, too, in a somewhat novel form,—in the shape of letters written in a free and familiar style; and although it necessarily involves somewhat less of precision and scientific accuracy, we are not disposed to deny that the book is pleasanter reading: it is, as was intended, something like talking to the author in his library. The volume contains forty-four letters, embracing almost all the diseases to which females are liable, but without any systematic arrangement: beginning with general remarks on the sex and the sexual organs, and then treating of the diseases of the external parts, of the vagina, displacements of the womb, fibrous growths, cancer, physometra, hydrometra, ovarian diseases, puberty, menstruation and its disorders, hysteria, and concluding with the diseases of pregnancy and child-bed.

It would be unjust to the author to attempt an analysis of so extensive a range of subjects in the limits of a review; we prefer selecting one or two diseases, and laying them before our readers as a specimen of the work. Take, for instance, prolapsus uteri, of which Dr. Meigs gives an excellent description, both anatomically and mechanically. In noticing the symptoms he mentions one which is generally omitted,—the amount of neuralgic pain sometimes attendant upon even a slight displacement.

“I have now met with about thirty instances,” he says, “in which the most cruel neuralgia of the whole belly, with sensibility equal to that of acute peritonitis, proceeded from a very slight degree of uterine prolapsion. I say so, for when I could not press the bulbs of my fingers ever so lightly on the abdomen without giving great pain, I have found that when I supported the womb on my index finger, pressing it upwards less than half an inch, the woman could not only allow me to touch the abdomen, but even to touch and press it very violently, without complaining. From all this I conclude that much of the pain of prolapsus uteri depends on the pulling or stretching of nerve fibrils, caused by the sinking downwards of that organ.”—p. 130.

Dr. Meigs very properly cautions the reader against mistaking slight prolapsus for retroversion, in consequence of the body of the uterus becoming more horizontal as it descends; and he points out the important action of the levator muscles in resisting this displacement. Add to the enfeebled state of these muscles a relaxed state of the vagina, and you have the principal causes of prolapsus. He differs from Dr. Bennett, who attributes it in many cases to engorgement and consequent

increased weight of the cervix. Probably Dr. Bennett has laid too much stress upon this cause, but that it is in some cases a real one we have had positive proof.

“ The indication of cure in prolapsus,” in accordance with the Professor’s views, is, of course, “ an indication to cure the vagina;” and the next investigation is as to the value of pessaries, together with a curious notice of ancient authors on the subject from Spach’s collection, which is not so rare in this country as Dr. M. has found it in America. Most of the pessaries used in Philadelphia “ are of blown glass, and consist of globes from an inch and a half to two inches and a half in diameter, or else of concavo-convex discs about the same sizes.” We have tried the glass disc, and with comfort to the patient, as it does not become saturated with the discharge, and is less offensive. But the pessary Dr. M. prefers is one manufactured by Mr. Joseph Warner, of silver gilt. The silver is reduced by hammering to the thinness of letter paper, and then gilt, either by fine gilding or by galvanism, and when finished, a globe of two inches in diameter, thus formed, does not weigh more than two scruples. Of the same material is formed the disc, ring, elytroid, and horse-shoe pessary, &c. Dr. Dewees preferred the disc pessary, Dr. Physick the globe; and whilst admitting the value of any other which will maintain the uterus at a proper level without irritation, Dr. Meigs thinks the globe pessary the most perfect.

The next question is an important one:

“ Can a man expect to cure a prolapsus by the use of a pessary? Yes, provided there be no loss of substance. A woman who in labour has lost the perinæum by the effect of laceration or sloughing, may be held to have lost also all useful functions of her levator ani, and there is no hope, therefore, of a permanent cure of the tendency in her to prolapsus; since, in fact, the perinæum, the normal antagonist of the diaphragm and abdominal muscles, is taken away from her, giving to the antagonism alone supreme and unassisted power. Those females, however, who labour under prolapsion from mere descent of the vagina, arising from its relaxation or loss of tonicity, can be cured by the pessary. I take it for granted that every living tissue has an inherent tendency to contract, and when that tendency is not carried out into execution, it is because something resists, antagonizes, prevents it from obeying its law. To support, then, a vagina at its normal elevation within the pelvis, is to take away the resisting, antagonizing, preventing cause, and to allow it with time to recover its normal density and solidity.”—p. 173.

We must confess that our experience has not been quite so favourable; to a certain extent, no doubt, the vagina recovers

its contractile power, but beyond that the pessary, from its bulk, becomes an obstacle. After a time the pessary may be left off, and in its place our author recommends the use of the bag or *sachet*, recommended by Levret and the more ancient authorities. This bag of muslin, in shape like a glove finger, and of various sizes, may be filled with bruised galls, oak bark, krameria, matico, &c., worn during the day, and withdrawn at night. Dr. Meigs speaks highly of their usefulness, to which we can also bear witness; they not only afford support but aid in contracting the vagina, and can be used where pessaries would be objectionable. Of the caoutchouc and stem pessaries Dr. Meigs speaks favourably; but objects, and we think with reason, to the horse-shoe pessary, and anticipates no great benefit from the utero-abdominal supporters. As to the propriety of using the pessary the Professor remarks:

“ I recommend that you adopt as an invariable rule in medicine, that you will not prescribe nor even sanction its employment, until convinced by actual knowledge that the indication for it is there. I say so, because everybody knows something, however imperfect, about the pessary; and every woman who has a pelvic misery will naturally be disposed to play the quack as to her own case. If the case be one likely to be benefited by it, you ought to allow and recommend it; but that you cannot know by instinct. Inquire, examine for yourself, and if there be sensibility, discharges,—and especially discharges of a bad colour,—away with a pernicious instrument, which can only make the sick woman more ill, and bring into discredit a means of relief commended by the united voices of twenty centuries.”—p. 188.

Now let us turn to another species of displacement, and one which is exciting some interest at present in consequence of the researches of Beatty, Simpson, P. Smith, &c.—we mean *Retroversion of the Uterus*, which Dr. Meigs regards as “ one of the most common of the deviations of the organ met with in practice.”

“ Retroversion of the womb,” he says, “ is a case in which the fault—the maladine or pathological fault—is in the round ligaments, and not in the womb itself. Hence, if you intend to cure a woman of retroversion, your intention should have reference rather to the ligamenta rotunda than to the womb. Cut off the round ligaments and you will have retroversion; but the wound and the ligament being united again at the wounded point, the womb will be held up, and there can be no retroversion. Relax, stretch, elongate the ligamenta rotunda, and the womb retroverts; strengthen, shorten, cease to elongate the same ligaments, and the patient is cured. This is the doctrine.”—p. 191.

The accident, according to Dr. Meigs' experience, although more frequent in child-bearing women than in others, is far from being uncommon in virgins or those who are not pregnant. The chief exciting cause is an over-distended state of the bladder, and secondary to this the occurrence of tenesmus, premising, however, an enlarged condition of the body or fundus of the uterus, from pregnancy or some other cause.

Generally speaking, the principal distress arises from the inability to void the urine; but if the woman be pregnant, and the bladder be emptied without replacement of the uterus, other and more formidable symptoms arise:

“ The disordered womb can, by its nervous connexions with the spinal and sympathetic nerves, disturb and vex any and every organ in the body, from the brain to the massa carnea on the sole of the foot. It can vex the pharynx and œsophagus with spasm or globus; close the jaws through the masseters or temporals; jaundice the blood by its influence on the liver; cause ischuria or diabetes in a moment; bring on constipation or diarrhœa; simulate apoplexy or eclampsia; set the hemispheres in a rage of insanity, or excite the cerebellum to the manifesting of chorea, or abolish the sensorial and motor cords of the spinal marrow: but if in the non-gravid condition the retroverted deviation of the uterus can cause such great derangements, what must be those that attend some of the terrible consequences of retroversion of the gravid womb. They are truly appalling. They consist in all the fruits of complete compression and obstruction of the contents of the pelvis by the growing womb.”—p. 197.

We must candidly confess that we are not prepared to agree with the former part of this statement; we have not found symptoms so severe produced by retroversion of the unimpregnated womb, nor the disease itself so frequent. That it may give rise to dragging pain in the groins, to a sense of weight in the pelvis, profuse leucorrhœa, to difficulty of passing water or evacuating the rectum, with some sympathetic distress in other organs—for instance, the breast—we admit; but we have never witnessed the enormous disturbance described by Dr. Meigs.

Of course the remedy is to replace the womb, which, in most cases, may be done with tolerable facility; in difficult cases Dr. Meigs recommends the patient to be placed on her face in bed, with the knees drawn up, until the pelvis is raised as high as possible, and then the manipulation with two fingers in the vagina. He has given a plate of an instrument to be used in carrying forwards the fundus uteri when it cannot be done by the finger. After the reposition of the uterus,—

“ When you can venture to employ a pessary, which you cannot well do in the pregnant female, you should adjust one of sufficient

magnitude to produce or extend the vagina. I say extend the vagina, and I say so because there will scarcely be a relapse if you keep the vagina stretched to its full length. I have many times repositied a non-gravid womb that had long been retroverted, and placed beneath it one of Dr. Physick's globe pessaries of two and a half inches diameter. Such a pessary will keep the womb in its place pretty well; but if the round ligaments have lost all their tone, a full bladder, aided by a fit of sneezing, laughing, or straining at stool, will readily overset it again."—p. 216.

In cases of frequent relapse, Dr. Meigs has found great benefit from Dr. Blundell's stem pessary; he expects but little from the disc:

"As for the sponges and other horrid conceits of the sort, they are too detestable to be thought of. I disapprove of the glass ones; when strong, they are too heavy, when light, too frangible. A cork pessary is bad, because the wax that covers it comes off, and leaves the rough cork in contact with the parts. Such contact is dangerous—it is ulceration. Do you expect that I should say something more of those utero-abdominal supporters? I deem them abominable. I have never used and never shall use one of them."—p. 217.

The Professor says nothing of the instrument proposed by Dr. Simpson for supporting the uterus *in situ* by a stem passed into its cavity, and attached at right angles, or nearly so, to a disc in the vagina or stem passing externally, a figure of which appeared in our last Number. That such an instrument is far better calculated for the purpose, if the uterus will bear it, than any of the common pessaries, there can be no doubt.

We feel sure that the profession will do justice to the merits of Dr. Meigs' work, and agree with us that it contains a vast amount of practical knowledge, by one who has accurately observed and retained the experience of many years, and who tells the result in a free, familiar, and pleasant manner. The volume does not pretend to scientific arrangement, and therefore it would be unfair to judge it by that standard; but we are sure that there are few who will not find it pleasanter reading than medical books usually are. There are, undoubtedly, some blemishes, a few grammatical inaccuracies, too frequent employment of words coined for the occasion, or of Latin words anglicised, with which we are not familiar, and which have rather a barbarous sound. We are inclined also to object to the dialogues between the Doctor and his patients; no doubt some of them may be very amusing, but others are very tedious, and all are rather out of place. But our readers shall judge for themselves. In the midst of the chapter on Retroversion the following dialogue occurs,—it speaks for itself:

“ I was called some time since to a young woman residing in North-street. When I presented myself to her, I found her lying upon the bed, apparently in pain. It was afternoon.

“ ‘ Will you please inform me what it is that has induced you to call for me, Madam?’

“ ‘ I am in great pain, Sir.’

“ ‘ Where is the pain situated?’

“ ‘ In the lower part of the stomach and back.

“ ‘ You mean in the lower part of the abdomen, I presume, near the shear-bone or bar-bone?’

“ ‘ Yes, Sir.’

“ ‘ How long have you suffered from it?’

“ ‘ Since the early morning.’

“ ‘ Are you married?’

“ ‘ Yes, Sir, these six weeks.’

“ ‘ What brought the pain on you?’

“ ‘ I do not know, Sir; it came on in the car, as I was returning from New York.’

“ ‘ Have you any difficulty in making water?’

“ ‘ I cannot make a drop, or at least only a few drops pass, with the most violent efforts, and the urgency never ceases; I am suffering dreadfully indeed.’

“ ‘ Had you ever such an attack before?’

“ ‘ Never.’

“ ‘ What is your age?’

“ ‘ Twenty-two, Sir.’

“ ‘ Are you regular?’

“ ‘ No, Sir.’

“ ‘ Do you suppose you are *enceinte*?’

“ ‘ Yes, Sir?’

“ ‘ How long?’

“ ‘ About five weeks.’

“ ‘ And you never felt this disorder before?’

“ ‘ I never felt anything of the sort till to-day.’

“ ‘ Have you pain in the back, did you say, too?’

“ ‘ Yes, dreadful.’

“ ‘ Is that pain chiefly felt about three inches above the lower end of the back-bone?’

“ ‘ Exactly there.’

“ ‘ You have a retroverted womb, Madam, with retention of urine caused by it.’

“ ‘ I do not know what you mean, Sir.’

“ ‘ I mean that, as you are pregnant some five weeks, the womb is become much larger than it was before you were married, and it is now turned over backward; in fact, it is topsy-turvy. The pressure of the top of your womb against the lower part of the bowel and back-bone gives you pain in that situation; while the bottom, or rather the point of the womb, is pressed with force against the bladder of urine, vexing and paining it, and stopping the course of

the water, which can only escape drop by drop, while your bladder becomes continually fuller and fuller. It is very full now.'

" 'Why, what in the world is to be done?'

" 'You are to allow me to remedy the difficulty.'

" 'How?'

" 'By replacing the womb in its natural position.'

" 'But how can you do that?'

" 'With my hand.'

" 'I cannot think of such a thing?'

" 'Very well, Madam, I shall have to bid you good afternoon, for I cannot think of anything else. In fact there is nothing else to be done for you.'

" 'Why, I had rather die.'

" 'As you please, Madam; you are the mistress; *ce que femme veut, Dieu le veut*; but I hope you will permit me to say that it would be very silly of you to die, for want of the power to make water, when there is a physician at hand can put you so easily in the way to do it easily.'

" And she resorted to the ladies' resort—tears. After she had comforted herself a little in this way, and come to her calmer reason again—

" 'Will it hurt me, Sir?'

" 'Oh, no; not a bit.'

" 'What am I to do, then, if I must?'

" 'You are to lie on your left side in bed, covered up head and ears with the bed-clothes. You are to draw up your knees very high, and I will cure you in a moment.'

" I washed my hands; I always do that first. I dipped the index finger of the right hand in oil. With its point I felt the gravid bas-fond of the womb looking downwards and forwards in the pelvis, while the os tinæ was cocked up against the urethra above the arch.

" 'Don't bear down now, child! Don't resist the pressure of my hand! I shall not hurt you at all, not in the least.' And so by a gentle, steady, augmented pressure against the bas-fond, pressing it upwards and backwards, I followed the ascending fundus until it suddenly escaped above the promontory, upon which the os uteri looked downwards again, and the organ was repositied.

" 'How do you feel?'

" 'Oh! greatly relieved.'

" 'Sit up and try to make water. I shall retire from your chamber: call me when you are done. Is there a wash-stand in the next chamber?'

" In a few minutes she called me back, thankfully telling me she had made a large quantity of water, and was quite well again.'

" 'Is not this, bad as it is, better than dying?'

" 'O yes, Sir, thank you!'

" 'I think it is. Farewell, Madam. Let me tell you, though, before I go, that if you had made water freely before you started

from New York this morning, you would not have had your womb turned over, for nothing did it but the bladder.' ” (Here follows the explanation of an illustrative drawing shown to the patient.)

“ ‘Do you understand it now?’

“ ‘O yes, perfectly.’

“ ‘Take care, then, not to let it get so full again, or it will serve you the same trick a second time.’

“ ‘Yes, Sir.’

“ ‘Farewell, Madam.’

“ ‘Good bye, Sir.’ ”—p. 198, *et seq.*

Elements of General and Pathological Anatomy. By DAVID CRAIGIE, M. D., F. R. S. E. Second Edition, enlarged, &c. Edinburgh, Adams and Black. 1848. 8vo. pp. 1072.

IN this work the author has undertaken to present his readers with “a view of the present state of professional knowledge in general and pathological anatomy.”

Each chapter commences with an exposition of the general anatomy of some one or more of the different textures or organs which in the aggregate constitute the human body, and then goes on to treat of the morbid appearances which the same tissues exhibit under the influence of disease.

This arrangement commends itself to the student, because it affords great facilities for the acquisition of a superficial knowledge of general and morbid anatomy; but we are much mistaken if it be found to furnish “a satisfactory view of the present state of knowledge in these branches of science.”

It must be admitted that a preliminary knowledge of general anatomy is absolutely essential to the successful cultivation of pathology, for how can the student who knows not the natural appearances of the healthy tissues recognise the changes wrought upon those tissues by disease? But we must be permitted to doubt the expediency of condensing, within the narrow limits of a single volume, these two important branches of medical science.

The book affords ample evidence of the author's laborious research in the collection of materials; but, enlarged as the field of general anatomy has been of late by microscopic researches, and with the vast additions which, in latter years, morbid anatomy has also received, we are confident that few individuals would now be found fully competent to the task undertaken by Dr. Craigie.

In those parts of the work devoted to general anatomy, some subjects of acknowledged importance are treated in a

very superficial manner, whilst in a few instances there is a tedious prolixity of description, which but ill requites the reader for his trouble in the perusal. Thus the structure of the heart is disposed of in little more than half a page, whilst the description of the nervous centres extends over fifty pages.

We must protest against the entire of the first section of the first chapter of the second book; the style is too pedantic to suit the taste of the present race of students, and practitioners will scarcely comprehend it. Reform in anatomical nomenclature is surely nowhere so much required as in the description of the brain, and yet Dr. Craigie here introduces many of the quaint and ridiculous terms of the Continental schools, instead of resting satisfied with those in ordinary use in Great Britain and Ireland. The following paragraphs may be taken as fair specimens of the style in which the brain is described:

“The commutual or dichotomous region of the convoluted surface is terminated below by a sinuosity which is formed chiefly by a part of the brain, remarkable in appearance and organization. This, which was named by the ancient anatomists the smooth or polished body (*σῶμα τιλλοειδές*, *corpus læve*), to distinguish it from those surfaces which were formed by a cutting instrument, appears in the form of white fibrous matter passing transversely between the hemispheres; but is also marked by certain longitudinal lines, first correctly represented by Vicq-D’Azyr.

“The most conspicuous of these is that which lies exactly in the middle plane, and which is formed by the meeting of the transverse fibres, of which this body, termed middle or central band (mesolobe of Chaussier, the beam (*der Balken*) of Reil) consists. These fibres, which issue like white parallel lines, exceedingly minute, from the substance of the hemispheres, either stop suddenly or change their direction at this point. Their sudden termination gives rise to an appearance to which the expressive but erring epithet of suture (*raphe*) has been given. On each side of this other lines are remarked, following the same direction. In general they are situated about three or four lines from the median plane. About its middle, however, a very distinct appearance of lines collected into a considerable bundle may be observed proceeding backwards to its posterior end. As they advance they become more distinct, are about one line and a half broad, and of a greyish colour; at the posterior end of the middle band they diverge somewhat, and passing over this, proceed in a lateral direction downwards, till they are lost about the spot where the limbs of the brain (*crura cerebri*, Die Hirnschenkel) issue from the optic eminences. This forms the inner central or grey portion of the cylindroid eminence.

“The posterior extremity of this body is rounded; and when the membranes have been removed, the surface which forms this rounded end is found to communicate directly with the chamber

named third or middle ventricle. This surface is, in truth, continued forward, and forms the vault or ceiling (*fornix*, Die Zwillingsbinde, the twain band, Reil), a point which, though sufficiently obvious, is never noticed in description, or perspicuously demonstrated. The name of *callous body* and *vault* are applied in the ordinary works, as if they were denominations of different objects, or rather of different bodies. If they are still to be retained, it ought to be stated that they are names applied to opposite surfaces only of the same object."

We entertain some doubts whether the generality of our readers are likely to recognise the "corpus callosum," as the body thus laboriously described; nor do we agree with the author in thinking that the connexion between the posterior reflected extremity of the corpus callosum and the fornix is never noticed by demonstrators of anatomy.

In the pathological department, Dr. Craigie's labours will be more generally appreciated, though here too, like most compilations, his descriptions are very seldom impressive.

The diseased condition of the tracheo-bronchial mucous membrane, to which the artisans of Sheffield are subject, and which results from the inhalation of sand, dust, or metallic particles in minute mechanical division, is well described, and the statistics of the mortality amongst this class of persons afford some curious results. As this topic possesses some novelty to the profession in Ireland, we transcribe our author's description:

"Next to bronchial disease from the presence of foreign bodies may be placed that form of the disease which is the result of the inhalation of sand, dust, or metallic particles in minute mechanical division. This has been already mentioned in a general manner. But it may be proper to advert more particularly to the changes induced in the lungs as presented by the artisans of Sheffield.

"In the town and vicinity of Sheffield two sorts of grinding of edged tools are practised; one, dry grinding on a dry stone, the other, wet grinding on a stone moistened with water. Many articles, as scissors, razors, and penknives, are ground partly on dry stone and partly on the wet stone. Others, as forks and needles, are ground mostly on a dry stone. Table knives are ground principally on a wet stone. Saws, files, and scythes, are ground entirely on a wet stone.

"Dry grinding is most injurious, and tends most directly and effectually to induce bronchial and pulmonary disease, and thereby to abridge the duration of life amongst the grinders. The dry grinders, therefore, are most speedily destroyed. The life of the wet grinder is often prolonged to a considerable age.

"Of 1000 scissors-grinders above twenty years of age, only

twenty attain the age of between fifty and fifty-five years; only ten the age of between sixty-one and sixty-five; and none live beyond the latter age, while of the inhabitants of Sheffield generally 224 in 1000 are found living at sixty-five and above, and in the mid-land counties 413 in 1000. Of artisans in this branch 843 in 1000 die under forty-five years of age.

“With the fork-grinders it is worse. Among 1000 fork-grinders, aged above twenty years, not one attains the age of fifty-nine, while in Sheffield, among 1000 persons, 155 are living at 59. Of these 1000 persons, 472 die between twenty and twenty-nine years, 410 between thirty and thirty-nine; and the residual 115 are all gone before the age of fifty.

“Among 1000 razor-grinders above twenty years of age, 749 die under forty-one years of age, the rest mostly between forty-one and sixty; between sixty-one and sixty-five, only five are living; and after sixty-five all are gone.

“Of the penknife-grinders, not one in 1000 arrives at the age of sixty; 731 die before the fortieth year; and the rest are all destroyed before the sixtieth year.

“Saw-grinders, file-grinders, and scythe-grinders, who work on the wet stone, are less liable to bronchial disease, and are longer lived. The numbers pursuing saw-grinding are not great. Yet among seventy-eight persons engaged in it in 1843, nine were between sixty and sixty-five, and one died between sixty-six and seventy, and one at seventy-nine.

“The number of scythe-grinders is also not great. In 1843, there were thirty, of these, eight were between forty-one and sixty years of age. Both the saw-grinders and the scythe-grinders are exposed to accidents, sometimes fatal, from the breaking of the stone.

“The lesions which produce this great mortality are of a complicated character. The most common lesions are chronic inflammation, with thickening of the bronchial membrane, enlargement or dilatation of the bronchial tubes, emphysema, and expansion of the pulmonary tissue.

“The bronchial glands are enlarged, or converted into a black, hard, gritty substance, varying in size from half a marble to a large hazel-nut. In dividing these glands the sound emitted is the same as if the scalpel were dividing a soft stone, and the section is black and polished, and grates over the edge of the knife. Such masses are commonly detected in grinders who have belonged to the most destructive branches.

“Similar soft, sectile, gritty, or stony matter, is found in almost every part of the lungs, in portions varying from the size of a currant to that of a bean: adhesions between the pulmonary and costal pleura are also frequent.

“In some instances the lungs present an appearance as if black currants had been distributed through their whole substance, and accompanied with similar bodies, larger in size, but hard and gritty

like them. These currant-like bodies are also observed on the surface of the lungs. As to their nature Dr. Holland gives no opinion; but Dr. C. Fox Favell states that frequent examination has convinced him that they consist of the dilated extremities of veins containing some of the solid constituents of the blood.

“Tubercles are also occasionally found, with their consequences, vomicæ.

“Another state, frequently observed, is engorgement or infiltration of the lungs with a dark-coloured fluid, which is ascribed by Dr. Holland to the inhalation of the fine, black dust floating in the atmosphere during the operation of glazing.

“On the mode of production of these lesions, or the order of their succession, observers are not agreed. Dr. Arnold Knight and Dr. Holland consider the tracheo-bronchial membrane to be the original and principal seat of the disease, and the tracheo-bronchial irritation to be the primary morbid action, and to give rise to all the other effects,—the dilatation of the bronchi, emphysema, the formation of currant-like bodies, tubercles, pulmonary induration, and pleuritic adhesions.

“Dr. Fox Favell, on the other hand, thinks that the pulmonic tissue, or parenchyma, is the primary and essential seat of the disease,—does not regard the mucous membrane as the original seat of the disease,—and maintains that the organic changes found in the structure of the lungs constitute the essence of the lesion; in short, that all the changes seen in the lungs of the grinders depend on congestion and inflammation of their parenchymatous structure. Dr. Favell, in short, ascribes as much to the position, the labour, and the debauched habits of the grinders, as to the inhalation of the dust or powder.”

We beg to refer our readers to Dr. Craigie's description of the morbid condition of the lungs termed arctation and obliteration of the bronchial tubes, in which he has drawn largely from the original memoir of M. Reynaud. This affection is liable to be confounded with phthisis, and therefore deserves more than a passing notice from the reviewer, but our limits preclude us from extracting more than the following outline:

“Arctation, or narrowing of the bronchial tubes, has been already mentioned as one of the effects of bronchial inflammation, recurring repeatedly, and becoming at length chronic. In cases of this kind, these walls forming the tubes are distinctly thickened by effusion, either of blood or lymph, or both, into the submucous tissue, and the capacity of the tube is proportionally diminished. In other instances the presence of indurated or hæmorrhagic portions of lung round small bronchial tubes produces the same diminution in their normal dimensions.

“This sort of obliteration, to which may be referred several lesions of the lungs, takes place both generally or in a space of lung

more or less extensive, and, locally, in one or more bronchial tubes. In the former case the substance of the organ, instead of being vesicular or spongy, becomes solid, compact, and impermeable to the air.

“To the disposition now mentioned is conjoined another, referable to the surface of the lung, and which denotes the presence of the obliteration. This consists in more or less shrivelling of the pulmonic surface at the point corresponding to the seat of the obliteration. From this it is reasonable to infer that the shrivelling is in some manner connected with the bronchial obliteration. It is, indeed, not difficult to understand how the obliteration of a bronchus not remote from the surface of the lung, involving that of the branches issuing from it, must, by the consequent contraction, produce contraction or shrinking of the pulmonic substance, and shrivelling, more or less considerable, of the surface of the organ at the corresponding point.

“These shrivelled spots are easily recognised. The pleura is drawn to one or two points in a series of wrinkles, imperfectly radiated; the surface is perceptibly depressed; and when the part is touched it is found to be solid, adherent, firm, and inelastic.

“The most common seat of these obliterations is the upper lobe of the lung, and especially its apex, a fact of which it is necessary to be aware in distinguishing these obliterated spots from alleged healed tubercular cavities. They have been found, nevertheless, in the lower lobe. Reynaud found the lesion twice in this situation.

“The blood-vessels are not obliterated, except in the minute branches distributed through the indurated portion.

“The solid filaments, the relics of the obliterated tubes, are generally of a deep black colour.

“The causes of obliteration of the bronchial tubes are not positively ascertained. All that is known is this, that obliteration takes place in persons who had laboured under severe, repeated, or long-continued attacks of bronchial inflammation, usually chronic, and those who had attacks of chronic pneumonia.

“Reynaud is inclined to ascribe the occurrence of the lesion to diphtheral or albumino-facient inflammation of the bronchi; and there is no doubt that the bronchial membrane is liable to this form of inflammation, and that this form of inflammation may produce or terminate in obliteration. He admits also that he has met cases of acute pneumonia, with hepatization of the lung, in which the lesion consisted in inflammation which had in all the small bronchi given rise to the formation of false membranes, which filled, more or less accurately, all their cavities.”

In concluding our notice of Dr. Craigie's work, we venture to predict, that as a book of reference it will be occasionally consulted by the pathologist with advantage, but that few will adopt it as a systematic treatise on general and pathological anatomy.

Dysphonia Clericorum, or Clergyman's Sore-Throat; its Pathology, Treatment, and Prevention. By JAMES MACKNESS, M. D., Member of the College of Physicians, London; Consulting Physician to the Hastings Dispensary. London, Longman. 1848. 8vo. pp. 125.

IN the fourth volume of our New Series we drew the attention of our readers to a publication by Dr. Horace Green, of New York, in which "Clergyman's Sore-Throat" was made a special subject of investigation; and we laid before them the view which he took of the pathology of that affection, its causes, and treatment. In the work now before us, from the pen of Dr. Mackness, the disease is still further investigated, more especially as it is met with in England, and additional interest is, therefore, given to the subject. This affection of the vocal organs is one of very frequent occurrence among the members of those learned professions in which the voice is frequently called into play, as the bar and the church, causing not only much annoyance, but often completely debarring them from the exercise of their avocations; and thus becoming one of much practical interest to our's, the *less talking* profession.

Dr. Mackness devotes the two first chapters of his treatise to a concise but accurate and well-written description of the anatomy and physiology of the vocal organs, concluding with an account of the effects of irritation and inflammation on the mucous membrane, on its follicles, and on the subjacent tissues.

In the third chapter he considers the causes of *dysphonia clericorum*: in this country it is, he remarks, frequently a much milder affection than that described by Dr. Green as existing in America, very often running its entire course without exhibiting any special affection of the mucous follicles; and he accounts for the fact of the disease being usually associated with follicular ulceration among Dr. Green's countrymen, on the ground of their being very generally the victims of dyspepsia, brought on by their peculiar habits of eating. Restricting, as Dr. Mackness does, his description of the disease to an affection to which public speakers alone are liable, we think his views are perfectly correct; but Dr. Green incorrectly used the appellation "clergyman's sore-throat," for of the cases he narrates not more than one in five were in any way public speakers: and disease of the mucous follicles of the air passages, causing aphonia or dysphonia, is,

we believe, fully as common amongst other persons, not public speakers, in the British Islands as in America.

The chief cause of the malady is, according to Dr. Mackness, *dyspepsia*, an affection to which the members of the clerical and legal professions are peculiarly liable, from their sedentary habits; but the most common exciting cause is, undoubtedly, over-exercise of the vocal organs.

“Not so much,” writes our author, “that excessive action which takes place during a temporary,—it may be a rare or solitary effort,—but the long-continued strain which is kept up for a lengthened period, and by which the muscular and tendinous parts of these organs are kept on the constant stretch, without those intervals of rest which occur in common conversation. We all know how difficult it is to hold out the arm from the body in a horizontal posture, even for a few minutes only, without the muscles becoming wearied and painful. The muscles of the vocal organs are, of course, alike influenced by the same law which pertains to the other voluntary muscles. It is easy, then, to understand how necessary it is to the well-being and due administration of any bodily function that rest should alternate with action. The mere exercise of any part of the body, and, of course, of the vocal organs equally with others, even though that exercise may be carried to a high degree, is not in itself calculated to inflict much injury, so long as an adequate interval of rest is allowed between each effort. Exercise only becomes painful when it is a protracted strain without intermission on a set of muscles and their tendinous expansions, without a sufficient interval of relaxation to enable those secretions of the investing membranes to fulfil that office which is appointed by the all-wise Creator to produce a soothing and protective agency.”—p. 32.

With reference to the pathology of dysphonia clericorum, it may be, as Dr. Mackness correctly states, simply a nervous affection, when, of course, it is a functional disease; or it may depend on some alteration of structure in the parts which compose the vocal organs. In the former case it is sometimes caused suddenly, by mere mental emotion, but more generally by prolonged mental anxiety; in some instances, however, “it may precede and indicate a more serious disease of the nervous system.” When it is caused by alteration of structure, it may depend on simple irritation of the mucous membrane, or on changes of a more lasting and serious character. The latter the author arranges under the following heads:—1. A state of crethism of the mucous membranes from the expansion of their capillaries excited by irritation. 2. Congestion, the diameter of the capillary vessels becoming permanently increased. 3. Serous effusion from the gorged capillaries. 4. Inflammation as a termination of long-continued congestion. 5. The deposi-

tion of adventitious structure in the surrounding parts, or of a yellowish cheesy matter in the follicles of the air passages. 6. Hypertrophy of the mucous glands. 7. Induration of the follicular glands. 8. Morbid secretion of the follicular glands. 9. Ulceration of the follicular glands. 10. Chronic inflammation causing a relaxed and congested condition of the mucous membrane. 11. All those changes confined to the immediate organ of voice, the larynx. The descriptions of the sixth, seventh, eighth, and ninth forms, are given in Dr. Green's treatise.

Dr. Mackness justly lays much stress on the necessity of carefully diagnosing to which of these causes dysphonia, when present, must be referred, as it is thus alone correct views of prognosis and treatment can be obtained; and in the fifth chapter he points out, with much clearness and ability, the symptoms indicative of the different forms of the disease.

In the sixth chapter the prognosis and treatment of the disease are considered. The plan of treatment best adopted to those cases in which the dysphonia is purely functional in the vocal nerves or muscles, is

“Daily exercise in the open air; the administration of mineral and vegetable tonics, and of these, preparations of iron should hold a prominent place; valerian and the fetid gums; stimulating frictions over the larynx; the inhalation of the steam of water, iodine, or chlorine; insufflations of alum or benzoin; cold sea baths or cold shower-baths. Should these means fail, the preparations of strychnia, the use of galvanism, blisters, or setons to the throat. The application of croton oil has also been much recommended in aphonia depending on anæmia, especially in those cases of ‘muffled voice,’ which are the result of nervous anxiety. Abstinence from public speaking is absolutely indispensable in all cases of aphonia which depend on debility alone; but when the malady originates in mental emotion, or mere nervousness, and is not accompanied by any redness of the fauces, it is desirable to persevere in the exercise of the voice in public until the nervousness is overcome, since in time the organs will regain their tone, more confidence and a better management of the voice be acquired. It must, however, be remembered that this nervous diffidence in speaking is sometimes itself the accompaniment of general debility. It especially affects young men of anxious temperament, who find themselves, perhaps without much previous training, placed down in a populous parish, where there are sick to be visited, children to be instructed, a congregation expecting from them weekly sermons, which require no trifling effort to prepare as well as to deliver, and withal a sense of weighty responsibility, such as attends but few, if any, of the other callings in life. Oppressed by various and contending claims on their time, thoughts, and feelings,—ever seeing something before them which,

with all their efforts, remains undone, unattained,—the bodily powers are debilitated, and the mind is laid open to nervous tremors in the performance of public duty. The vocal organs, being especially called into action, soon manifest by their irregularity the wear and tear of the mental machine. To attempt in such cases to remove the effects without first removing the cause is futile. The patient must be relieved from the labours which have been too much for him, or he will ultimately sink into such a state of general debility and prostration of the nervous system as may require years to remedy.”—p. 65.

Where follicular disease is the cause of the dysphonia, Dr. Mackness recommends the use of the solution of nitrate of silver, as proposed by Dr. Green, and which we have described in our review of his book already referred to; but he does not seem to have used it of the same strength, nor to have applied it directly to the interior of the larynx. Since we wrote the review of Dr. Green's book, we have, in numerous cases, employed the solution of nitrate of silver of the strength he advises,—from two scruples to a drachm of the nitrate in an ounce of distilled water,—and with very great benefit: indeed, in treating chronic sore throat now, we never use a weak solution. We have not, however, applied the remedy to the mucous membrane lining the larynx in the manner he proposed, nor do we think there is any occasion to do so; for we have found that, by pressing the saturated sponge against the back of the pharynx, a sort of spasmodic action of the parts is produced, by which a sufficiency of the solution is forced into the laryngeal cavity.

In the seventh and last chapter, Dr. Mackness treats of the prevention of the disease. In it the reader will find excellent and judicious observations as regards hygienic and dietetic measures, education of the voice, &c.

Our object in this short notice of Dr. Mackness's treatise has not been to give any analysis of its contents,—this its truly practical character, combining conciseness with clearness of expression, forbids,—but to bring it under the notice of the profession as a timely and useful addition to English medical literature.

Recent Advances in the Physiology of Motion, the Senses, Generation, and Development. By WILLIAM BALY, M.D., F.R.S., and WILLIAM SENHOUSE KIRKES, M.D. Being a Supplement to the second Volume of Professor Müller's "*Elements of Physiology.*" London, Taylor and Walton. 1848. 8vo. pp. 132.

In the preface to the work before us Dr. Baly states that, after having published his translation of Müller's *Physiology*, it was his intention that there should follow a supplement or appendix, containing later information on the subjects treated of in the most important part of the second volume, namely, that portion comprising the physiology of "generation and development."

The translator subsequently found it advisable "to extend the original plan of the present work, and to make it supplementary to the entire second volume of '*Müller's Elements,*'" by including an account of the more important advances in the "physiology of motion and of the senses."

The subject of ciliary motion is first considered, and some additional information communicated:

"It is found, for example, that this variety of epithelium (the ciliary), besides lining the interior of the nasal cavity, and of the frontal and maxillary sinuses communicating with this cavity, is continued up the lachrymal canal into the lachrymal sac, and is also spread over the mucous surface of both eye-lids, but not over the conjunctiva covering the eye itself. From the posterior part of the nasal cavity the ciliary epithelium passes to the upper part of the pharynx, which it lines to about opposite the lower border of the atlas; it is also spread over the posterior surface of the root of the soft palate, and laterally it is continued to the orifice of the Eustachian tube, up which canal it extends into the cavity of the tympanum.

"It was until recently believed that the ciliary motion is entirely wanting in the urinary apparatus of the vertebrata. But it has been found by Mr. Bowman, that in frogs a layer of ciliary epithelium lines the urinary tubules just at their junction with the Malpighian capsules. No trace of cilia has yet been found in any part of the urinary apparatus of mammalia. M. Rossignol finds that the ciliary epithelium, along the mucous lining of the respiratory passages, ceases at the vesicular structure of the lung, its place in the vesicles themselves being occupied by simple pavement epithelium, composed of roundish or oval cells."—p. 1.

In the next section "the muscular and the allied motions"

are considered, and some interesting new matter relative to the physical, vital, and chemical properties of *arteries* has been introduced. The structure of arteries has at all times received the attention of physiologists; and there are, probably, few subjects upon which a greater diversity of opinion has existed, than the question as to whether arteries are merely elastic tubes, or endowed with a power analogous to muscular contraction. Haller admitted the muscular nature of the middle membrane of the arteries, but, at the same time, when speaking of their alternate dilatation and contraction, asserts that their power of propelling the blood by their contraction "was weak; that he never witnessed its spontaneous exercise, nor could he excite it by mechanical irritation." Verschuir and Hastings advocated the active contraction of the arteries, and succeeded in demonstrating it by means of mechanical irritation. John Hunter, it is well known, was the celebrated advocate for the muscularity of arteries as well as their elasticity. Between these two properties he draws a marked distinction, and maintains that there is an effect produced from stretching an artery which indicates the presence and nature of two substances, namely, the *elastic* and the *muscular*. He believed that the elastic power is greatest in those large arteries nearest to the heart, whilst the muscular power of the smaller arteries is superior to that of the larger. In speaking of the muscular structure of these vessels, he observes: "What the direction of the muscular fibres may be, I never could discover, but should suppose them oblique;" and as to the precise nature of the action of these fibres, he says, that "we know them likewise to be certainly endowed with the power of contraction peculiar to a muscle," and "that this power of muscular contraction acts chiefly in a circular direction." Bichat entertained an opinion decidedly opposed to that of Hunter; he denied that arteries possess any muscular structure whatever, and asserts that when we institute a comparison between the arterial texture and the muscular, we shall find that "they have not a single point in which there is the least analogy." He admits that arteries do possess a certain power of contraction, which he designates by the term "*contractility of the texture*," and which he believes is brought into operation whenever their contained blood is removed from their interior, so as to give rise to a deficiency of the ordinary extension of their coats. Between this, which he considers a physical property, and "*animal contractility*," which is decidedly a vital property resident in the voluntary muscles, and dependent upon the influence which they receive from their supply of nerves, Bichat draws a marked

distinction. This animal contractility, he believes, is totally wanting in the arteries. After having performed a variety of experiments upon the arterial texture, he was led to another conclusion also, namely, that these vessels are destitute of "*irritability*;" that they remain in a passive state, notwithstanding the application of several irritating causes to their textures. Do the arteries, then, possess any power at all in the circulation of the blood? Upon this point Bichat asserts positively, that "the heart is all, and that arteries are essentially *passive*;" that in fact these vessels are remarkable for their want of vital properties, and should be arranged with the cartilaginous, fibrous, and fibro-cartilaginous textures. It must not be forgotten, however, that this eminent physiologist distinctly admits the existence of a certain power in the minute arteries concerned in the processes of secretion, exhalation, and nutrition, and which he denominates "*insensible organic contractility or tone*." It is, he states, strongly developed in the minute arteries of glands, of the skin, mucous surfaces, &c. As to the amount of influence exercised by this vital property upon the circulation of the blood, he observes:

"From the moment the influence of the heart on the blood contained in these vessels has ceased, that is to say, where the capillary system begins, then the *tone* also begins to influence, not only the nutrition of the vascular parietes, but likewise the circulation performed in that system; it is even exclusively in virtue of the *tonic forces*, that circulation, as will be seen, is carried on in these small vessels. The heart has positively nothing to do with it."

The observations of Dr. Parry are very nearly to the same effect as those of Bichat; he denies "the existence of muscular fibres as a component part of the arterial tunics," but, at the same time, recognises a power in the arteries which he calls *tonicity* or "*vital tonic contractility of the vessels*." As to the influence which this power exercises on the circulation of the blood, he maintains distinctly, that the arteries do not render "an uniform assistance under circumstances of undisturbed circulation," and that he has never, in any one of his multiplied observations, been able to discover any "*alternate dilatation or contraction*" of the arteries. He admits that in his experiments he has perceived *dilatation* and *contraction*, but that these movements were irregular, often confined to a small space of the artery, and seldom permanent. He comes to the conclusion, therefore, that this vital tonic contractility of the arteries does not produce "the state of undisturbed circulation under the ordinary circumstances of life."

Verschuier and Hastings have succeeded, by the applica-

tion of mechanical irritation to arteries, in producing contraction of these vessels. Thompson has produced the same result by the application of a weak volatile alkali to the smaller arteries in the web of a frog's foot.

Bikker and Van den Bosch have produced the contraction of arteries by means of electricity; and Giulio and Rossi have experienced the same results by means of galvanism. Sir E. Home has observed contraction of the artery to take place on applying an alkali upon the nerve leading to the vessel, although Bichat failed to produce a similar result by the application of galvanism in the same manner.

Schwann entertained pretty nearly the same views as Parry with regard to the tonicity of arteries. By the application of a few drops of cold water, the temperature of which was lower than that of the atmosphere, to the mesentery of the frog, he observed the contraction of the arteries; the contraction, however, was very gradual, and did not cease until after the lapse of a quarter of an hour or twenty minutes.

It will be seen by a reference to Müller's Physiology^(a), that this physiologist believes that arteries are not muscular, that the circulation is in no way dependent on any contractions of this description, and that the only power by which the blood is moved in the arteries is the force of the heart's contraction.

The chief object of the writer of this part of the Appendix is to show that arteries do possess the power of contracting upon their contents, and that their minute structure is similar to, if not identical with, the muscular fibres of organic life. He adduces proofs furnished from examination by the microscope, from the results of the application of chemical analysis, and from electromagnetism. How far these investigations go in confirming the view that arteries are endowed with *muscularity*, we leave the reader to form his own opinion. For our own part we cannot but believe, with Beclard, that "when the ventricles of the heart, by contracting, impel a new quantity of fluid into the arteries, already full of blood in motion, the velocity of the motion is increased in all the arteries. The function of the arteries is, therefore, to conduct, as tubes, the blood into all the parts, *and, as contractile tubes*, to impress upon it a part of the motion with which it is animated."

We shall now quote that section of the work which has been devoted to this subject:—

(a) Vol. i. pp. 199, 206-7.

"Of the elastic and contractile Tissue of Arteries.

"The statement made by Professor Müller, that the middle coat of arteries does not possess any muscular contractility, requires to be somewhat modified, principally on account of the investigations of Henle, which have shown that, besides elastic tissue, the middle arterial coat is provided with fibres in all respects analogous to those of organic muscle.

"This discovery is one of considerable importance, because it serves to explain what was hitherto unintelligible, the well-known property possessed by arteries, especially by the smaller ones, of contracting, under certain circumstances, to a diameter smaller than that which their elasticity alone could enable them to assume. Although this property has been matter of almost universal observation, yet by few writers has any plausible explanation of it been suggested. The sagacity of John Hunter, unaided by microscopic evidence, led him to conclude that the contraction of arteries was really a muscular act. Yet this opinion appears to have been lost sight of, for most writers since Hunter's time, including Professor Müller, have attributed the contraction of the arterial coats to a peculiar vital property, to which they gave the name of *tonicity*, or insensible contractility, without being able to refer this property to any definite structure. In the last German edition of the first volume of his work, Professor Müller alludes to this discovery by Henle, and considers it probable that the fibres described by him are the seat of the contractile power of the arteries, though he appears disinclined to admit their muscular nature.

"Chemical evidence, also, in favour of Henle's account, has been procured by Dr. Retzius, who finds that a solution of the arterial coat in acetic acid is precipitated by cyanide of potassium; this shows that some elements besides cellular and elastic tissues enter into its composition, for the solution in acetic acid of neither of these tissues is precipitated by cyanide of potassium: and that organic muscular fibre constitutes one of the other elements has since been rendered tolerably certain by Dr. F. C. Donders, who, by acting upon the middle arterial coat of a young sheep with a solution of potash, observed that in two or three hours the fibres of the coat separated from each other, became granular, and then dissolved,—changes exactly similar to those which he found organic muscular fibres, under like circumstances, to undergo. The existence of muscular fibres in the middle arterial coat is also inferred by the same physiologist from the effects produced upon it by the action of nitric acid and ammonia. When strong nitric acid is applied to a protein compound, it forms with it what is termed xanthoproteinic acid, which, with ammonia, produces a yellow xanthoproteinate of ammonia. On applying this test with the requisite caution to the coats of blood-vessels, Dr. Donders found that the middle arterial coat alone assumed the characteristic yellow colour. The other coats, as well as the coats of veins, remained unchanged in colour. But the most satisfactory evidence is that furnished by

some recent experiments of Ed. and E. H. Weber, in which they applied the stimulus of electro-magnetism to small arteries. One principal circumstance which induced Professor Müller to deny the muscularity of arteries was the inability of himself and of other experimenters who had occupied themselves on the subject to produce the slightest movements in arteries by means of galvanic and electric stimuli, while in all true muscular tissues the stimuli give rise to manifest contractions. An explanation of the failure of these physiologists may be found in the circumstance that in nearly all their experiments the arteries examined were of large size, such as the aorta and the carotids, in which the thickness of the muscular coat is comparatively small. The experiments of the Webers were, on the other hand, performed on the small mesenteric arteries of frogs; and the most striking results were obtained, when the diameter of the vessels examined did not exceed from one-seventh to one-seventeenth of a Paris line. When a vessel of this size was exposed to the electric stream, its diameter in from five to ten seconds became one-third less, and the area of its section about one-half. On continuing the stimulus, the narrowing gradually increased, until the calibre of the tube became from three to six times smaller than it was at first, so that only a single row of blood corpuscles could pass along it at once; and eventually the vessel became completely closed, and the current of blood arrested. When the experiment was so conducted that only a limited part of an artery was exposed to the electric stream, the extent of tube involved in the contraction was equally limited, not exceeding from one-eighth of a line to a line. The contraction did not ensue the moment the irritation was applied, and it continued for a short time after its withdrawal. The walls of the artery were rendered somewhat thicker at the contracted part, but the narrowing of the canal was proportionally greater than the increase in thickness acquired by the walls. Previous to the complete closure of the artery, the velocity of the stream of blood passing through it, in accordance with hydraulic principles, became considerably accelerated. When an artery was irritated only for a short time, or by a feeble galvanic current, it speedily resumed its former calibre on the stimulus being withdrawn, and again contracted on a re-application of it; but when the irritation was long-continued, or the stream very powerful, the portion of the artery narrowed by it lost the power of again contracting, and even dilated until it became double its former size, forming a kind of aneurism on the trunk of the vessel. When the abdominal aorta and other large arteries were experimented on in the above manner, no decided appearance of contraction ensued, a result agreeing with the observations of the experimenters before alluded to. The electric current produced no contraction of the capillaries, and only a slight one of the small mesenteric veins. One other remarkable circumstance observed in the Webers' experiments may, though out of place, be here mentioned, on account of its novelty and importance; and that is, the speedy arrest and subsequent coagulation

of the blood in the vessels, especially the capillaries, exposed to the influence of the electro-magnetic stream. The blood corpuscles adhered unusually to each other and to the walls of the vessels, and by the greater amount of friction thus produced they became retarded in their onward movement, and eventually arrested."

The next section is devoted to the consideration of "The muscular Tissue."

"*Structure of Muscle.*—It is found that, with an instrument of good defining power, the border of each fibril appears straight, or nearly so, and that the alternate dark and light particles of which the fibril is composed, have each a quadrilateral and, generally, a rectangular form; and that, in short, it would seem that the elementary particles of which the fibre is made up are little masses of pellucid substance, presenting a rectangular outline, and appearing dark in the centre. Their appearance, indeed, suggests the notion of minute vesicular bodies or cells, cohering in a linear series, the faint transverse marks between, being the lines of junction."

"*Cause of the striped Appearance of Animal muscular Fibre.*—In addition to the several arguments employed by Professor Müller, in favour of the opinion that the transversely striated appearance of voluntary muscular fibre is due to the peculiar structure of the ultimate fibrils of which the fibre is composed, and not to markings on the sheath of the fibre, Mr. Bowman draws attention to another conclusive circumstance, namely, that by successively bringing into focus fresh portions of the depth of a fibre, the first observed striæ become confused, or even vanish, whilst others come into view; showing that they exist not merely on the surface, but through the entire thickness of the transparent fibres."—p. 6.

"*Involuntary Muscles which are composed of striped Fibres.*—In addition to the heart, which is the only involuntary muscular organ mentioned by Professor Müller as having the striped or beaded variety of muscular fibre in its composition, must now be enumerated the lymphatic heart of reptiles and birds; the coats of the stomach and intestines of the tench, and of the stomach in the common roach."—p. 7.

"*Changes in Muscle during its Contraction.*—From what has been learned of late concerning the minute anatomy of striped muscular fibre, and from peculiarities observed in its mode of action, it appears probable that the contraction of this kind of muscle is effected in all cases simply by a closer approximation of the constituent parts of the primitive fibrils without any change taking place in their general direction, without the production of any zig-zag inflections." Mr. Bowman's observations have shown, "that at the contracted part of the fibre the transverse striæ were approximated closer to each other than elsewhere, and gave to the fibre at such parts a somewhat darker appearance than was presented by the uncontracted portions. Professor Ed. Weber's observations were made on muscular fibres while contracting under the influence of an electric current

from a rotatory magnet. He states that, under such circumstances, the contraction may be observed to be attended by a simple shortening and thickening of the individual fibres; and that in this shortening every part of the contracting fibre participates, so that the outline of the fibre remains uniformly straight, and presents no appearance either of zig-zag inflections or of the beaded or knotted characters described by Mr. Bowman."—p. 8.

Are the nerves the sole conductors through the medium of which all stimuli necessarily act on the muscles?

The author of the Appendix seems to entertain a doubt relative to the generally received opinions upon this subject, and appears to think,

"That the muscular tissue possesses within itself an inherent power of contraction, independent of the influence of the nerves distributed to it."

This is recurring to the old theory of Haller upon the same subject. The experiments, upon which this view has recently been attempted to be again revived, were performed by Dr. E. Harless:

"Having exposed rabbits to the influence of the vapour of ether until they were so far overpowered by it that no movements of their bodies could be excited by means even of galvanism, they were killed by opening the carotid arteries, and the brain and spinal cord exposed. On galvanizing these nervous centres not the slightest movement of the body resulted; but when the galvanic stimulus was applied to the muscles of the trunk, violent contractions at once ensued. Galvanizing the crural nerve produced not the slightest action of the muscles of the corresponding leg, but these muscles were thrown into immediate contraction when the stimulus was applied directly to themselves."—p. 10.

Upon the subject of "Voice and Speech" the author states that "very little new information has been contributed to this department of physiology;" we shall, therefore, not dwell upon this part of the Appendix.

"*Of the Senses generally.*—It appears, from some ingenious experiments by Professor E. H. Weber, that the prolonged application of either heat or cold to nerves of ordinary or special sensation, diminishes or suspends for a time their power of conveying to the sensorium the effects of impressions made on them. He found, for example, that on keeping the tongue immersed for from half a minute to a minute in water heated to about 125° Fahr., and then bringing it in contact with sugar, in powder or in solution, the sweet taste of the sugar was no longer perceived. Moreover, the sense of touch, usually so delicate at the tip of the tongue, was also

rendered imperfect. A sensation of numbness was induced in the organ, not unlike that perceived in a limb when 'asleep,' and this sometimes remained for about six seconds or longer."—p. 13. "He found also that by immersing the elbow in a mixture of ice and water, the little and ring fingers became numb, as if 'asleep,' and had no longer the power of distinguishing between heat and cold, and could only imperfectly perceive the contact and pressure of bodies."—p. 14.

"*Of the Sense of Vision. Tunics of the Eye. The Tapetum.*—M. Brücke considers that the function of the tapetum is to reflect the light on the staff-shaped bodies which compose the membrana Jacobi situated over that part of the retina most used in vision, and so to enable these animals to see at times when animals unprovided with a tapetum would be in darkness. He observes that all the colours emitted in the dark from the eyes of animals possessed of a tapetum proceed from this structure alone, except the red, which is produced entirely by the blood in the large vessels of the retina and choroid. A luminous appearance of the human eye, when the organ has been placed under favourable circumstances, has been observed by Mr. Cuming, and he is of the opinion that the reflection takes place, not from the retina but from the choroid and its pigment. Mr. Bowman is disposed to consider it as proceeding from the hyaloid membrane and retina, as well as from the choroid; but M. Brücke is of opinion that in man, as in animals, it proceeds entirely from the blood in the vessels of the choroid and retina."—p. 15.

Some interesting observations have been made upon the contraction and dilatation of the iris, in order to ascertain the share which its nerves possess in regulating these movements:

"The result of experiments recently performed by Signor Guarini, taken in conjunction with those obtained by Valentin, and Dr. J. Reid, appear to leave no doubt that the movements of the iris are regulated by nervous influence derived from two different sources: the act of contraction, whereby the action of the pupil is narrowed, being excited by the third pair of cerebral nerves; that of dilatation, whereby the size of the pupil is enlarged, being dependent on branches from the cervical spinal nerves, which pass through the superior cervical ganglion of the sympathetic. Irritation of the third nerve, for example, causes contraction of the pupil, and division of this nerve is followed by dilatation. Irritation of the superior cervical ganglion, on the other hand, induces dilatation, while its destruction or removal is succeeded by contraction of the pupil. Moreover, after removal of this ganglion on one side, the application of belladonna or administration of strychnine is no longer followed by any marked dilatation of the pupil of the corresponding eye, but that of the opposite eye becomes extremely dilated. Besides thus proving the double source of nervous influence supplied to the iris, those experiments appear also to establish the truth of

the opinion that dilatation of the pupil is as much the result of an active state of the iris as its contraction, and that the one act is, most probably, produced by the radiating fibres of this structure, the other by the circular fibres situated around its inner margin."—pp. 15-16.

As yet we possess no satisfactory information, derived from microscopical examination, relative to the muscularity of the iris.

With regard to the structure of the *Retina*, it is now admitted that the expansion of the optic nerve consists of numerous fibres which radiate from the point of entrance of the nerve, and pursue a tolerably straight course towards the anterior margin of the retina:

"At first the fibres run in distinct bundles, but these, by subdivision and a plexiform interchange of the individual filaments, speedily disappear, and for the remainder of their course the fibres are disposed in the form of a fine fibrous membrane in which it is difficult to distinguish the several filaments. According to Dr. Todd and Mr. Bowman, this expansion of the optic nerve appears to be composed of the grey or central portion alone of the individual fibres, the external white substance ceasing at the point where the optic nerve perforates the sclerotica."—p. 19.

"The observations of all who have recently examined the minute structure of the retina concur in describing the existence of numerous cells and globules surrounding the fibrous expansion of this membrane, and situated chiefly along its internal surface, and within the meshes formed by the interlacing of the individual nerve fibres."—p. 19.

"*Adaptation of the Eye to Vision at different Distances.*—Hueck, who has especially occupied himself with the consideration of this subject, states that the contractile tissues by which the lens is acted upon is situated along the anterior and inner portion of the ciliary body, and consists of transversely arranged, firm, probably muscular, fibres, connected together in a kind of network. Brücke's account corresponds very closely with this, though he considers the whole ciliary body to be composed of muscular fibres, which pass backwards to be inserted into the choroid coat. In birds and many amphibia he describes these fibres as being of the striped variety, but in man and mammalia they are unstriped. Huschke is of opinion that on the contraction of these fibres, which ensues during the vision of near objects, the fluid contents of the canal of Petit are compressed against the margin of the lens, whereby the lens itself is lessened in diameter, and becomes more curved forwards on its anterior surface. Brücke, on the other hand, considers that the action of these fibres will be to draw the choroid, and with it the retina, closer round the vitreous body, so as to compress it [and thus, probably, push the lens forwards, so as to assist in the vision of

near objects]. On relaxation of these fibres the choroid regains its former position by the recoil of a layer of elastic fibres which, according to Brücke, is situated between the ciliary body and the choroid. Dr. Clay Wallace, who was amongst the first to describe these muscular fibres of the ciliary body, considers that they act in adapting the eye to near vision by compressing the ciliary veins and so producing the turgescence of the ciliary processes, which he, as well as the other observers already mentioned, recognises as the cause of the accommodating power of the eye. According to Wagner, the ciliary processes, as well as the ciliary body, contain contractile fibres, which have all the characters of those of organic muscles. Wagner's account of these fibres of the ciliary body and processes is also corroborated by the researches of Dr. Todd and Mr. Bowman." —p. 24.

A Dispensatory, or Commentary on the Pharmacopœias of Great Britain; comprising the Natural History, Description, Chemistry, Pharmacy, Actions, Uses, and Doses of the Articles of the Materia Medica. By ROBERT CHRISTISON, M. D., &c., Professor of Materia Medica in the University of Edinburgh. Second Edition, revised and improved, with a Supplement, containing the most important new Remedies. Edinburgh, Black. 1848. 8vo. pp. 1003.

WE feel much pleasure in bringing under the notice of our readers the new edition of Professor Christison's valuable work; the first having been so long out of print as to lead us to fear that the author would be unable to spare sufficient time from his numerous avocations as a lecturer and a physician in the deserved enjoyment of most extensive practice, to superintend the editing and publishing of a second. The author, impressed with the same dread, informs us that he availed himself of the co-operation of Dr. Douglas Maclagan, Lecturer on Materia Medica in the Edinburgh Extra-Academical School, "who has adjusted his notes, and supplied numerous valuable additions under many of the articles" for this edition. This announcement in the Preface prepared us for the great correctness and many improvements by which it is characterized; for Dr. Maclagan has, by his numerous contributions to the Materia Medica, shown his intimate acquaintance with, and zeal for the advancement of that important branch of medical science, to the improvement of which he has for many years devoted talents of a high order.

No alteration has been made in the original plan of the work, the alphabetical arrangement being still followed, preceded, as

before, by a pharmaceutical introduction ; but a supplement has been added, in which a description of the most important new remedies is given. This supplement will by many be thought too short, as only a very few of the remedies that have been recently introduced into the *Materia Medica* are described in it ; but we are of opinion that the author has used a judicious discretion in thus limiting this portion of his book to an account of those novelties in medicine which are likely to stand the test of experience. In a work such as Dr. Christison's *Dispensatory*, the same caution should be observed with regard to new remedies as in a national *Pharmacopœia* ; for any statement there put forward receives an authentic stamp, and thus a medicine which has been but a short time in use, may, if noticed in it, obtain a character which, on further trial, it will be found not to merit : moreover, there are several treatises on the *Materia Medica* already in print, in which all new remedies receive a sufficient share of attention.

Amongst the novelties noticed in the Supplement is chloroform. Having given an account of its discovery, chemical history, and adulterations, Dr. Christison describes its actions and uses. He first speaks of its poisonous properties when swallowed in large quantity, and then of its effects when taken internally in medicinal doses ; the latter he considers to be calmative and antispasmodic, and believes that on further trial it will prove an important remedy. The dose is from five to twenty minims ; it may be given dissolved in water, with the aid of a little spirit. He gives the following account of its effects when inhaled in the dose of one fluid drachm or somewhat more :—

“ The most frequent effect is the rapid production of coma, with complete relaxation of the muscles ; slow, and often stertorous breathing ; upturning and fixing of the eyes ; and total insensibility to agents which cause, in ordinary circumstances, the most acute suffering. The pupils are variously affected, but always contractile. Some frothing at the mouth is not unusual. Slight convulsive twitches of the face or limbs are more rare. The insensibility may begin in fifteen seconds, and is seldom postponed beyond two minutes if the chloroform be skilfully applied. It continues usually between five and ten minutes, but sometimes for two hours, if the inhalation has been kept up for some time by renewing the chloroform on the handkerchief. Sometimes quiet sleep succeeds, more generally a drowsy, dreamy state, but not unfrequently rapid complete consciousness and activity. In general no recollection whatever is retained of any occurrence during the state of insensibility, but sometimes there occurs a dim apprehension of what passed. For

the most part there is no remarkable subsequent effect, no lassitude, no sickness, no loss of appetite; occasionally, however, a little weariness or sickness."

When the effects produced by the inhalation of chloroform are too intense,—death has been caused by it recently in at least three cases,—Dr. Christison recommends as "the best remedies, the horizontal position, cold air fanned across the face, and a stream of cold water poured on the brow and head only." He also justly cautions against the use of internal stimulants before the patient revives somewhat, as the respiration might be further embarrassed by them. In urgent cases; of course, artificial respiration must be employed.

In conclusion, we need scarcely say that we strongly recommend this work to all classes of our readers. As a Dispensary and commentary on the Pharmacopœias, it is unrivalled in the English or any other language.

On Indigestion, its Pathology and Treatment, by the local Application of uniform and continuous Heat and Moisture. With an Account of an improved Mode of applying Heat and Cold in Irritative and Inflammatory Diseases. By JAMES ARNOTT, M.D., Physician to the Brighton Dispensary. London, Churchill. 1847. 8vo. pp. 107, with a Plate.

DR. ARNOTT is favourably known to the Profession by the skill which he has manifested in devising mechanical aids for the more successful treatment of disease; for an account of his numerous suggestions and inventions with this view, we would refer to his admirable little essay on Therapeutical Inquiry, published in 1845, which will well repay an attentive perusal. The present treatise is written in the same spirit, and displays throughout the inquiring mind seeking after new means of curing disease. Being struck with the advantages which the local application of heat or cold produces in many affections,—although no effectual means of regulating the degree of either in their continuous application has hitherto existed,—he devised a means of regulating "the dose of temperature" with precision, and the results at which he has arrived are here set forth:—

"Having thus obtained," says he, "possession of what, from so great an alteration in its qualities, may be termed a new remedy, I have employed it extensively, because I found that it supplied a great desideratum in therapeutics, viz., an expedient

having sufficient power to reduce vascular excitement without the hazardous effect of debilitating the general system, or causing local irritation—an antiphlogistic measure, characterized as much by its safety as by its power. I have applied heat, combined with moisture, in irritative and inflammatory affections of the great cavities; and cold, combined generally with fluid pressure, in diseases of the skin, and of the joints, in ulcers and in external inflammations. But the disease in which I have principally used the former application, is indigestion. It is the most common of all the affections to which this exhibition is applicable, and stood more in need of improvement in its treatment. Being, moreover, the least under the influence of other measures, the efficacy of heat and moisture in curing it has been more unequivocal than in other diseases of the same class. And I have confined myself on the present occasion almost exclusively to the consideration of indigestion, from the idea that, if the practitioner become familiar with the proper use of the means which I have recommended, in a disease of such frequent occurrence, and respecting the cure of which he must be daily conscious of the present insufficiency of his art, he will be prepared to extend its use to other analogous affections. He will not, as respects its employment in dyspepsia, find any opposition on the part of his patient on account of the nature of the remedy, for none can give the patient less trouble or be more agreeable to his feelings; nor will he be impeded, by the use of this external application, in the employment of whatever internal remedies may be required, either for the disease of the stomach itself, or for any of the numerous sympathetic affections which arise from it.”—p. iv.

Previously to describing the apparatus he has invented, the author enters into an historical account of the employment of heat and cold as antiphlogistic remedies; and proves that the reason why they have fallen so much into disuse is the want of proper means for the application of either. This is a fact known to every physician; and at present we rarely think of employing these remedial agents, except as auxiliaries to other modes of treatment. In one form, indeed, cold is still applied as a chief remedy, namely, in the form of cold water poured from a height on the head, in coma and convulsions. With its good effects when thus used every physician is familiar, and this happens to be the only mode at present employed in which the *continuous* application of cold can be kept up for any length of time. Although of undoubted efficacy, cold to the head is now rarely had recourse to in fever, from the almost total impossibility of so regulating the temperature as to keep the part below the standard temperature of the body, unless which be effected, the application is positively injurious. So convinced are the most eminent writers on fever of this, that we find them advising warm fomentations instead: “I have, therefore,” says

Dr. Graves, in his Clinical Lectures, “given up, except in very few cases, the practice of applying cold lotions, and give a preference to the use of warm fomentations of equal parts of vinegar and hot water, applied to the temples and shaven scalp, and frequently repeated.”

The injudicious manner in which heat also is at present employed as a remedial agent is well described by Dr. Arnott, as follows:

“In the medical use of heat there has hardly been any other effort made to attain uniformity than by the frequent renewal of the applications communicating it. The attempt to preserve the heat of poultices, sponges, &c., by covering their outside with flannels, varnished cloths, or other non-conducting substances, while it has so ready means of escaping inwards, must, obviously, be of very little avail. Almost all that can be thus effected is, as in the ordinary use of warm clothing, to retain the natural heat of the body.

“One injurious consequence of the rapid cooling of cataplasms and fomentations has been, that in order to retain a serviceable degree of heat for some time, they are usually applied at a temperature greater than is appropriate to the case, or than the physician would approve, could he otherwise maintain the heat. A series of pernicious excitements will often thus be produced, over-balancing, in many cases, the good that would result from a more moderate temperature; for too great a degree of heat is quite as hurtful in cases requiring this remedy, as a freezing temperature would be in cases in which cold is the appropriate application.

“The difficulty in most cases, and the impossibility in others, of maintaining the appropriate remedial degree of heat by poultices or other similar means, appears, as we have said, to have caused the abandonment of the remedy to a certain extent. The only effort now made by some practitioners, in cases in which they would have formerly applied a repetition of poultices, is to retain the natural heat of the part. They now substitute pieces of lint, or thin slices of sponge, dipped in warm or tepid water, and which, after being covered with varnished silk, are allowed to remain without changing for an indefinite time. When moisture is an advantage and an increase of heat is not required, such expedients, or “water dressings,” as they have been called, are very useful, and may be advantageously used instead of ointments or plasters. But, unfortunately, their nature has been much misunderstood. By many they are deemed equivalent to hot fomentations, and are sometimes, by a gross abuse of the term, even so denominated. As well might a glass of water be called a purgative draught. Hot fomentation implies the use of a liquid of a temperature considerably higher than that of the part to which it is applied. The usual direction respecting the degree of heat which cataplasms and fomentations should have, is that given by the President of the College of Physicians, viz., that the water should be ‘as warm as the patient’s feelings will readily

admit.' This may be somewhere between 110° and 115° , or 15° at least higher than the usual temperature of the water dressing. Now, although merely retaining or preventing the loss of the natural heat of the part may to a certain extent be useful, it would be absurd to expect from this the remedial effect of warm fomentations, either in kind or degree. It would be as reasonable to expect the sleep and relief from pain that are procured from the exhibition of twenty drops of laudanum, by a tenth part of the dose. Nor can such negative practice be called leaving nature alone, or trusting altogether to her restorative efforts. For nature, as has already been observed, prompts the employment of these remedies; and the immediate soothing effects of warm fomentations, as well as their more permanent benefits, sufficiently attest the advantage of attending to her admonitions. The same objections apply to too low a heat, in cases where fomentations are indicated, that apply to tepid lotions where cold is the appropriate remedy. The practice is nugatory. The patient is deprived both of what would give him relief and of what may be essential for his cure."—p. 33.

Having thus alluded to the inefficacy of the methods used by the profession in the present day, for the employment of two most valuable therapeutical agents, the author proceeds to describe the plan he proposes, and which he states that he has now employed for many years:

"A current of water, of the appropriate temperature, is made to flow through a thin waterproof cushion or bladder in close contact with the body. The water runs into the cushion from a fountain reservoir raised above it, through a long flexible tube; and again, escaping from the cushion, it passes through another tube into the waste vessel. The cushion is of a size and form suitable to the part of the body on which the water is to act; and, by a particular contrivance, any pressure from its weight is prevented. The part in contact with the cushion is kept moist either by previously wetting the cushion, or by interposing a piece of wet lint, flannel, or other bibulous substance.

"It is obvious that, by the use of this 'current apparatus,' there must be perfect control over the application of heat or cold. Fresh particles of water pass continuously over the surface of the body, abstracting or communicating heat, just as (with respect to its abstraction) the hand is cooled by exposing it to a current of cold air, or by holding it in a stream of cold water, although there is rarely necessity for a quicker change of the particles of water than is occasioned by the alteration of their gravity in consequence of their alteration in temperature. The intervening membrane or cloth makes no difference, or only that which a thicker scarf-skin would cause, rendering a little higher or a little lower temperature of the water, or a quicker passage of it over the surface, necessary to produce the same effect.

“ The advantages of this method over those that have hitherto been employed, are as follows:—

“ First: it enables the practitioner to apply any determinate and appropriate temperature uniformly for any required period.

“ Second: cold can thus be applied to any part of the body without risk from the exposure of other parts. And, allied to this, is the power of confining or limiting with exactness the action of the remedy to certain surfaces.

“ Third: the ease and comfort to the patient with which the apparatus may be managed, and the little trouble which its working, when once thoroughly understood, gives to the attendant. No one having a knowledge of human nature will consider the latter circumstance as unworthy of being noticed. Should the patient sleep, his rest will not be disturbed by a continuance of the process.

“ Fourth: the power which this method gives of gradually increasing or decreasing the heat or cold in order to prevent stimulus or reaction at the beginning or end of its action, or during the continuance of this, should circumstances demand the change.

“ Fifth: the possibility of thus applying equal pressure, with perfect regulation of temperature. This combination, hitherto impracticable, is of the highest importance in the treatment of most of the diseases in which pressure has been found of remedial value; and it has been extended to several, such as eczema and other obstinate diseases of the skin, in which pressure, probably from the heat that is caused by bandages, has never been applied. But there is more gained by this combination than merely the avoidance of an injurious circumstance. Besides that, compression by a fluid has a great advantage in its perfect equality, over the unequal and quickly-disadjusted pressure of a bandage. Many diseases will yield to the united action of pressure and cold that would resist either of these agents when employed alone. The only modification of apparatus required for this important combination is, that the water cushion shall be confined to the part to be supported or compressed, and the reservoir raised to the height required to give the appropriate weight or pressure.”—p. 38.

The author meets the objection which he fears may be raised to the use of this apparatus—its complexity, by assuring us that it is no less efficient than simple, and very much more simple and easy of application than many of the operations at present daily employed in the treatment of disease, for example, the abstraction of blood by cupping. He tells us, moreover, that we are not to judge of the beneficial effects of heat and cold thus applied, by reference to the common mode in which they are used; and that practitioners are reduced to the alternative of having to use this apparatus, or of rejecting a most powerful, and unquestionably safe remedial agent, particularly for subduing inflammation.

In the third section of his treatise the author describes at length the mode of managing the "current apparatus" in the treatment of various diseases, and of its application to different parts of the body; and then enters into a particular description of its construction.

"CONSTRUCTION OF THE CURRENT APPARATUS.

"*The Reservoir.*—Where it is of importance that the pressure of water in the cushion shall always be the same, as it is in every case in which the remedial application of *equal* pressure is desired, or that the stream of water shall be uniform, the reservoir must be constructed on the principle of the fountain bird-glass, or ink-glass, having an opening nearly an inch in diameter close to the raised bottom, with a pan in front about three inches deep, and having a stop-cock about an inch below the opening in the body of the vessel. The reservoir is of japanned tin, and contains about four gallons of water. When it is used for warm water it must be covered by thick flannel or some other non-conducting substance, or a small lamp may be placed under it.

"The reservoir for the 'Intermitting Current Apparatus' is a can containing six pints, with an opening near the bottom for the stop-cock.

"*The Water-Cushion or Bladder.*—A thin or prepared bladder will form the best cushion when close contact with the skin is desirable. The pieces of brass for connecting it with the supply and waste tubes are made with a neck, to prevent the slipping of the bladder; they are made as light as possible, and that part which projects into the bladder should have holes in the sides as well as through the centre.

"The particular kind of macintosh cloth principally used for water-cushions is that which is called "zephyr cloth" by the makers. It is thin, yet sufficiently strong and durable. The practitioner might prepare the cushions himself; and with the cans of dissolved India-rubber there are directions given for its employment for such purposes; but it will generally be more convenient to procure them from the manufacturer. For the Current Apparatus each cushion must have at least two brass connecting-pieces fixed in it, and in situations appropriate to the purpose for which it is used. In the cushions employed in the treatment of dyspepsia, for instance, one piece is inserted about a third from the corner of the long margin, and another in the middle of the short margin. When the 'Intermitting Apparatus' is used, that in the long margin is alone sufficient.

"The cushions must be of various forms, adapted to their several uses. For the head the cushion must resemble a double night-cap; and for the limbs it may be made like a double glove or stocking.

"Cushions of mackintosh cloth are very durable; and when

they leak they can be easily repaired by detaching a bit of the outer from the inner layer, after moistening it with oil of turpentine, then cutting this off and replacing it by another bit of cloth covered with caoutchouc varnish.

“ *The Supply and Waste Conduits.*—The recent invention of vulcanized india-rubber affords the best material for these. If made of this they should be thick, and have a bore of at least three-eighths of an inch. The supply-tube is about four feet in length. One end is fixed to the stop-cock of the reservoir by a brass stopper, like that of a bottle, and has a small cork or stopper suspended from it, by which it may be closed when it is removed from the reservoir; the other end receives one of the connecting pieces of the cushion, or is screwed to it. The waste tube may be of various lengths, suitable to the distance of the waste vessel from the patient; and it receives at its outer end, especially when pressure is to be made, a brass screw to act as a stop-cock. When the end of the waste tube rests on a stand it receives a piece of pewter tube instead of the brass screw.

“ *The Supporter.*—This constitutes a very essential part of the apparatus; its purpose being to prevent the weight of the water dragging or pressing on morbid parts, or on yielding cavities, and to keep the cushion in close contact with the skin. A convenient supporter for the cushion used in dyspepsia is a piece of sheet lead covered with calico, and of rather smaller dimensions than the cushion. For the head a similar piece of lead is bent into the form of a sort of trough, and a circular piece of calico is sewed to its covering all round, to support the top of the cushion. For the thorax and abdomen I have occasionally used a sort of wooden trough, the sides of which may be brought nearer the centre by means of ranges of holes in the piece constituting the bottom, and corresponding plugs in the side pieces. The large cushions used for surrounding the chest or abdomen often require to be tied with tapes to the supporters, to prevent the floating of the patient's body.

“Other contrivances are preferable for certain purposes as supporters. That which was first used in the case of a diseased ankle, and which is described in the Appendix to my ‘*Essay on Therapeutical Inquiry*,’ was a sort of boot, made of tin, opening lengthways by hinges; it fitted the limb closely above and below the diseased joint, but was much larger in the middle.”—p. 96.

These observations are illustrated with a plate of the apparatus.

We have not entered into any account of Dr. Arnott's views as to the applicability of this method of treatment to indigestion; as our object has been to bring under the notice of our readers his valuable improvements in the mechanical application of useful therapeutical agents which had nearly fallen into disuse.

On the Cure of Cataract, with a practical Summary of the best Modes of Operating (Continental and British). By HUGH NEILL, Surgeon to the Liverpool Eye and Ear Infirmary. Liverpool, Deighton and Laughton; London, Churchill. 1848. 8vo. pp. 224.

THIS is a curious specimen of the art of book-making. Mr. Neill thinks that, with rare exceptions, the best mode of treating cataract is to "recline" the opaque lens. He describes his manner of performing the operation, and gives the reasons why he prefers it to "extraction." All this occupies about ten pages, to which he adds the opinions of three French oculists on the nature and cure of cataract, accompanied with a running commentary of his own, and the volume attains its mature bulk of 224 pages by the addition of a final chapter on the use of ether and chloroform.

Mr. Neill states in his preface, that the object of making such long extracts from other men's books, is "to bring before the profession an analytical review of the leading contributions of eminent continentalists on the cure of cataract," as "many years have now elapsed since a *resumé* of British and Continental authorities upon cataract has been submitted in England." The reader, whose curiosity has been excited by this announcement, will be grievously disappointed to find that the names of Stoeber, Magne, and Desmarres, complete the list of "eminent continentalists," while the only "British authority" quoted is—Mr. Guthrie.

Part I. is headed "Leaves from Victor Stoeber," and contains seventy pages of remarks on the nature and cure of cataract, such as may be found in most of the text-books published within the last twenty years.

Part II.—"Views of Magne"—is chiefly occupied with praise of the catoptric test for cataract, which was first described by Purkinje(*a*), but is here vaunted as the discovery of Sanson. Mr. Neill in this, as in the preceding part, furnishes a running commentary on his author, and gives an occasional explanation of what he thinks a difficult phrase—not always happily; e. g., "sincipital cauterization (burning the back of the head)."

In Part III., the "Views of Desmarres" are set forth, by a translation of that part of his *Traité théorique et pratique des*

(*a*) J. E. Purkinje, *Commentatio de Examine Physiologico Organi Visûs*, &c. Vratislaviæ, 1823, 8vo. We shall hereafter take an opportunity of exposing the inconclusiveness of this means of diagnosis.

Maladies des Yeux, which relates to cataract. Much of the old ground already explored in the First Part is here gone over again. Mr. Neill avows himself an admirer of "free translations;" so are we: but freedom may be carried too far, as in the case of proper names, which have hitherto been considered untranslatable. Mr. Neill, however, is not to be daunted, and at page 114, Marc Antoine Petit receives the honour of British citizenship as "Marc Antony 'the little.'" We fear that many of our countrymen, familiar with court-plaster, will hardly recognise their old acquaintance as "gummed taffetas;" and, without being severe purists, may dislike to read, in a work professedly English, that "an operation was floored." We must quote one more specimen of Mr. Neill's knowledge of French. Desmarres, describing Mr. Alexander's method of performing extraction, says: "*Ce procédé, entre autres avantages, présente ceux de se passer d'aide, d'éviter la sortie brusque du cristallin, et de ne pas s'exposer à celle des milieux de l'œil.*" At page 138 his translator thus *freely* renders the passage: "This method dispenses with an assistant, avoids the sudden emanation of the crystalline, and *does not expose it to the middle parts of the eye.*"

The table in which Mr. Neill sets down the *number* of operations he has performed is not worthy of much attention, because, as the *result* is not stated, the mere fact of "reclination" having been done so many times, proves nothing either for or against it; but we cannot pass over unnoticed his unfair attempt to advocate the superiority of reclination over extraction by repeating the silly statement, that, "to extract a cataract well, you must first put out a hatfull of eyes." Mr. Neill ought to know, that a person endowed with manual skill (without which gift no one should ever attempt to operate on the eye), if he has thoroughly prepared himself by diligent practice on the dead body, need not lose even his first case of extraction; while it is equally certain that a bungler may just as effectually blind a man with a needle as with a knife. Mr. Neill's knowledge of the subject, and his idea of "the requisites for success when extracting a cataract," may be gleaned from one of the few original passages in his book: "For extraction, extraordinary endowments and great acquirements, on the part of the surgeon, are indispensable. You require experience; I may well say, extraordinary experience." Well, we grant that much of this is true; but if such be not possessed, at least to a certain extent, the operator fails in one of the greatest requisites for an ophthalmic surgeon. "And on the patient's part, exceeding steadiness and nerve are requi-

site." "You require," says Mr. Neill, "a *full*, prominent eye," and "a *well and fixedly dilated pupil*"!! And of the operation itself, he says: "The cornea should be fully cut across *at once*, and smoothly; no hitching or botching; the least bungling will floor [?] the operation."—p. 183. But even on the discovery of the advantage of cutting across the cornea "*at once*,"—that is, we suppose, completing this part of the operation, without making several attempts at it, or not making the incision by a series of successive cuts,—Mr. N. is not original; for having applied to a London operator as to his mode of proceeding, he advises that "the incision should be made at once, *if possible*."—p. 182. When an operator strongly objects to extraction, and prefers other modes of curing hard cataracts in advanced life, where the eye is otherwise sound, and in all respects suited to it, according to the acknowledged rules in such cases, we are greatly inclined to question his powers of preforming that delicate, but, in proper hands, eminently successful operation.

Lectures on Diseases of the Eye. By JOHN MORGAN, F. L. S., &c. Second Edition, carefully revised and enlarged, with Notes, by JOHN F. FRANCE, Surgeon to the Eye Infirmary, and Lecturer on Ophthalmic Surgery, at Guy's Hospital. London, Highley. 1848. pp. 222. With coloured Plates.

IN the present instance we have deviated from the usual rule of our journal, of reviewing all books bearing on the same subject in the same article; but the character of that now under consideration differs so widely from the work which we have just noticed that we do not think it would be fair to place them in the same category. This is, as the title explains, a second edition of the late Mr. Morgan's *Lectures on the Eye*, first published in 1839, slightly enlarged by a preface and some notes by the editor, Mr. France, and a biographical memoir of the author. It does not profess to be a system of ophthalmic surgery, but merely a series of lectures upon some of the more important diseases of the eye, principally intended for the use of students, and delivered in a simple and unostentatious style. To this are added eighteen coloured plates, illustrative of the diseases of the eye, and taken either from nature or given in the form of enlarged diagrams, explanatory of vascular arrangements and other morbid appearances. Of these plates, the most of which are drawn on zinc, we cannot say much; they are somewhat more formal, but scarcely so natural, as those of Mr. Tyrrell, with which, as works of art, they may be classed.

Indeed, since the days of Wardrop and Travers, we have had no illustrations of ophthalmic pathology published in Great Britain deserving of notice, either as works of art or as accurate delineations of disease. This is, however, a desideratum which we hope to see shortly supplied. As the result of the experience of a practical ophthalmic surgeon, Mr. Morgan's book was well received by his pupils and the profession upon its first appearance. It was, however, soon superseded by the more important and extensive work of the late Mr. Tyrrell. The original object of the book was to describe concisely and clearly the common and more important diseases of the eye, "and to illustrate as much as possible the analogy between the diseases of the eye and those of all other parts of the body;" and the chief intention which the author had in view was, he informs us, to induce the surgical student to become as well acquainted with ophthalmic diseases as with general surgery; and any work which is calculated to induce the student and the young practitioner to acquire a knowledge of that which is not set forth in the required curriculum of his education, is certainly a boon to humanity and a benefit to professional literature. As a general treatise on the diseases of the eye, it is, however, very deficient, and as a student's manual it wants that conciseness, arrangement, and facility of reference, which a work of that description particularly requires. Many diseases are altogether omitted, and the author does not, we must say, appear highly informed upon the literature of the subject on which he treats. On the present occasion, however, we have merely to notice a few of the opinions and modes of practice set forth in this reprint, and to see how far the labours of Mr. Morgan's successor in the ophthalmic department at Guy's Hospital have increased the value of the work.

Ulcers of the Cornea.—Mr. Morgan gives in a few words a very fair description of the usual appearances of ulcers of the cornea, and we have no desire, in reviewing a work such as his professes to be, to find fault with the omission of some of the rarer forms and peculiar modifications which this class of diseases occasionally present. In describing the healing process the author makes the following judicious remarks, which we quote the more readily, because the profession generally, and young practitioners in particular, are led into error in interfering with a process of nature intended as a reparative and not as a morbid action.

"Now, of the numerous and beautiful illustrations of the natural adaptation of means to ends derived from pathology, a healing ulcer

of the cornea is, perhaps, one of the most striking. We see, in these cases, the mode in which nature avails herself of distant resources for the attainment of her object: when the vessels of the cornea are unable to effect the process of repair, the vessels of another part are called in to their assistance; a plexus of conjunctival vessels forms, and extends itself across the sclerotic, and over the cornea, without giving off any branches until the ulcer is reached: to this part they are distributed, and here they pour out and organize adhesive deposit, and thus assist in repairing the breach produced by ulceration. After a time, the sides of the ulcer approximate, the cavity is filled up by soft grey matter, and a smooth surface of conjunctiva is formed on the spot; the halo now disappears, and the red vessels having performed their destined office return to their former condition, and continue thenceforward to carry colourless blood."

How frequently have we seen caustics and even the knife employed to destroy these nutritious vessels! Mr. France adds the following judicious remarks upon this section of the text. We think, however, that although the author did not cite authorities, his commentator should occasionally make some acknowledgment to the labours of others:

"*Note.*—Ulceration of the cornea being rarely, if ever, a primary affection, the treatment, for the most part, merges into that adapted to the exigencies of the disease which has led to it. There is a peculiar feature, however, connected with ulcers on this part; namely, that however intractable they may be for a certain time,—though the immense majority yield readily to judicious remedial measures,—yet from the period when perforation of the cornea is effected, the cases almost invariably make rapid progress to convalescence. It would seem that the diminution of tension, produced by the aqueous chambers being completely evacuated, is the immediate cause of the mitigation and progressive amendment which so directly ensue. Of course, this fact is not cited with the view of inculcating any laxity in the endeavour to arrest the advance of ulceration; nor as establishing, though it certainly suggests, the propriety of puncturing the cornea in certain cases: but when, as will sometimes occur, a deeply eroding ulcer upon the cornea resists the means usually found efficacious, and imminently threatens perforation, it is encouraging to know that, the mischief once accomplished, the surgeon may in all probability date the patient's relief and steady improvement from the moment of its accomplishment; and that, if anticipating and prepared for the event, he need not despair of altogether preventing ultimate injury to vision from its occurrence.

"The application of belladonna is, under these circumstances, the principal adjunct to the measures previously requisite; and its beneficial action is irrespective of the position of the ulcer. For, if

the aperture in the cornea be near the axis of vision, dilatation of the pupil palpably tends to remove the iris entirely from the danger of prolapse; while, if near the margin of the cornea, though dilatation cannot obviate the proximity of the iris, yet the general centrifugal contraction of that membrane, which produces dilatation, creates such draught upon the endangered or actually prolapsed portion of iris, as must materially counteract its disposition to protrude.

“It is needless in this place to advert to the arguments which prove dilatation of the pupil to be, as just assumed, an active condition; further than simply to state that, owing to this fact, the persevering use of belladonna will sometimes eventually succeed in detaching an iris partially adherent to the cicatrix of a corneal ulcer, even after the lapse of five or six weeks from the formation of that adhesion. The same fact is shown, in a still more striking manner, in the disruption of frænal adhesions between the iris and the capsule of the lens; the force exerted upon which, prior to their giving way under the influence of belladonna, is plainly exhibited by their evident tension, and the deep festoons into which the free portions of the iris are drawn at the intervals of adhesion. Belladonna should, therefore, be applied, when perforation happens at any part of the cornea; and its use should be persisted in for many weeks after the aperture is closed, if synechia anterior is not sooner overcome.”

We have our doubts, however, whether Synechia anterior, or attachment of the iris to the back of the cornea, will ever be overcome by the action of belladonna, though continued for weeks, if the adhesion be once firmly established. The band of adhesion may, however, be considerably lengthened, and the pupil consequently enlarged thereby. Slight adhesions between the uvea and lens are much more likely to be broken up by the application of belladonna, used in the form of atropine, a preparation, of the efficacy of which Mr. France makes no mention here.

In the succeeding section upon “*Abscess of the Cornea or Onyx*,” the same error in nomenclature occurs, which has been frequently alluded to in this Journal. “When,” says Mr. Morgan, “an abscess on the posterior layers of the cornea bursts into the anterior chamber, the matter sinks to the lower part and produces an appearance called hypopyon or unguis.” And again: “The term onyx is applied to the opaque inflamed spot, which encloses an abscess of the cornea; and the term unguis, or *hypopyon*, to a collection of matter in the anterior chamber.” This jumble of words and misapplication of terms is exceeding apt to mislead the reader, and should have been avoided in a work purporting to be “divested of the

overwhelming blunders of a licentious nomenclature." In fact, it would appear, from the foregoing description, as if onyx and unguis were both different diseases, whereas one is but the Greek and the other the Latin name for the same affection,—a collection of matter, usually puriform, in the lower segment of the anterior chamber, which, from its colour, and the shape which its boundaries naturally cause it to assume, very much resembles the white elliptical mark seen at the root of the nail of the human hand; whereas hypopyon should only be applied to purulent collections in the substance of the cornea, either circumscribed in the form of abscess, or, as is more frequently the case, diffused through the laminae of that membrane. The former disease onyx is but an appearance, generally the result of the latter, but it may also be caused by the gravitation of pus in the anterior chamber, no matter from what source, whether an abscess in the iris, the lens, or the cornea. Mr. Tyrrell pointed out the difference of these terms in his work; but Mr. Wharton Jones has recently fallen into the error to which we have adverted, in his *Manual of Ophthalmic Medicine and Surgery*; he describes hypopyon as a "collection of pus or puriform matter, occupying the bottom of the anterior chamber," p. 196: but in a previous section he says:

"The depositions of yellow matter which occur in the interstices of the cornea at its lower part, and which, on account of their presenting the form of the lunular spot at the root of the nails, are called unguis or onyx, and which are in general rapidly absorbed, as the attendant inflammation is subdued, have not the character of abscesses like the circumscribed collection of matter which forms at the centre of the cornea."—p. 78.

We believe this subsidence of matter through the interstices of the cornea, like water in anasarca, to be a very rare occurrence, if indeed it can ever properly be said to occur; and we are strongly inclined to the opinion that in such cases the appearances are deceptive, and that the matter is really in the anterior chamber, but from its glutinous or adhesive property (for it may be effused lymph as well as pus) that it does not gravitate from side to side on altering the position of the patient's head, as puriform matter in the anterior chamber usually does. There is considerable obscurity in the ancient writers on this subject, but it is high time that the nomenclature of this branch of surgery should be fixed and determined.

With the following judicious remark of Mr. Morgan's on the treatment of this affection we, however, fully agree:

"Avoid the use of mercury in excess. If the system becomes

affected by mercury, the disease frequently spreads with rapidity, and destroys the whole cornea. In this structure, as elsewhere, you will always find suppurative and ulcerative inflammation aggravated by ptyalism."

Mr. Morgan was in the habit of occasionally opening the cornea for the purpose of evacuating the effused pus; but this is a mode of practice which should be resorted to with great caution, and only when there is excessive pain, and that the matter has accumulated, so as to reach above the level of the upper margin of the pupil. It is astonishing with what rapidity puriform matter effused into the anterior chamber of the eye will be absorbed, as soon as the violence of the local inflammation has subsided, and that the constitutional irritation and general impaired state of the system has been lessened; and we are sure that we have seen cases in which the eyes were irrevocably lost from untimely interference, which, if left alone and treated with emollients, slight local depletion if necessary, continuous counter-irritation, attention to the state of the digestive organs, the use of bark, and rather a generous diet and pure air, &c., would have done well. We incline to the opinion of Scarpa:

"That, however small the wound made in the lower part of the cornea may be for the purpose of giving issue to the matter of hypopyon(*a*), it most frequently reproduces the inflammation, and occasions a greater effusion of coagulable lymph into the chambers of the eye than before."

It is evident, however, from the context, that the Pavian oculist understood and included puriform collections by this term; "and if even after the division of the cornea," he continues, "the matter of the hypopyon be permitted to flow out gradually and by drops, in consequence of its tenacity, some days elapse before it is entirely evacuated; and the glutinous lymph, by keeping open in the mean time the wound in the cornea, causes it to suppurate and degenerate into an ulcer," &c. We would particularly direct the attention of ophthalmic surgeons to the whole of Scarpa's judicious observations upon this subject. Mr. France adds as a note to the chapter in Morgan's book, now under consideration, the following observations:

"*Note.*—Two circumstances with respect to this object, not

(*a*) A Treatise on Diseases of the Eyes, &c. Brigg's translation, p. 276. Scarpa fell into the error common to his time with regard to the nomenclature of the disease, to which we have already adverted.

alluded to above, are worthy of notice. The first is, that whenever a collection of matter forms between the layers of the cornea, there is always produced an ulcer upon the corresponding portion of the surface; the second, that notwithstanding this overture from without, the abscess, in apparent opposition to analogy, habitually discharges itself internally. The regularity with which a hypopyon thus formed disappears under the influence of medicine, contributes to afford solution to a much debated question; namely, whether pus once effused is ever re-absorbed? It may be denied that the matter of hypopyon is true pus, in those cases which undergo cure without operation; and the surgeon must admit the fact, that microscopical demonstration of pus globules is in such cases, from their very nature, precluded. Still, as in the history and circumstances of its production, no less than in all its appreciable characters, this matter often agrees completely with the product of a common abscess, the objection appears to possess little weight.

“Operative interference should always be refrained from, unless the case imperatively demands it; but progressive augmentation of the morbid effusion, unchecked by treatment, so as to reach the level of the pupil, with continued maintenance of inflammation of the part, and of severe hemicranial and local pain, unrelieved by cupping, anodynes, and other measures enjoined in the text, indicates the necessity of puncturing the cornea. When thus urgently called for, the operation should be performed with the point of a cataract knife; and a low situation in the cornea should be selected, to facilitate the discharge of the morbid effusion, to diminish the danger of wounding the iris (which is, of course, lessened by the introduction of the instrument nearly in the same plane with, instead of at right angles to, that membrane), and to prevent a subsequent cicatrix in the axis of vision. After evacuation of the anterior chamber in this way, belladonna must be applied for the same purpose as after perforation from ulcer.”

With respect to the double ulcer in cases of matter produced in the layers of the cornea, we agree with the editor; but it in nowise follows that the pus is only discharged from that on the internal surface of the cornea. We believe it is discharged equally from the external one; but owing to the lachrymal secretion and from the parts being continually wiped by the lids, it is removed as fast as it is effused.

Inflammation of the Iris.—Mr. Morgan acknowledges three forms of iritis,—idiopathic, syphilitic, and arthritic. Treating of the idiopathic form of the disease, he has made a very just observation, and one for which he should get due credit.

“In very severe cases the whole of the pupillary margin of the iris becomes glued to the capsule of the lens, and thus the communication between the anterior and posterior chambers of the aqueous humour is cut off. The iris, thereupon, not unusually bulges for-

wards, from the pressure of the aqueous humour in the posterior chamber. A larger portion of aqueous humour seems to be secreted from the posterior than from the anterior chamber of the eye, under such circumstances; and consequently, when the communication between the two chambers is closed, the more abundant secretion behind necessarily pushes the iris towards the cornea.

“I do not mean to assert that in the healthy state a greater quantity of aqueous humour is secreted in the posterior than in the anterior chamber; but I think that this is always the case when, after perfect adhesion of the pupil, the iris is thrust forwards; for there appears no other way of explaining the phenomenon.”

During the past year the younger Chelius, of Heidelberg, has advanced the opinion that the aqueous fluid is secreted from the membrane of the uvea *only*; and we ourselves have little doubt that it is much more abundantly secreted in the posterior than in the anterior chamber. Cases such as those described by Mr. Morgan must be constantly observed by all ophthalmic practitioners, and we have seen instances in which the aqueous fluid in the anterior chamber having escaped during the operation of keratonyxis, and the lens having fallen forward so as to fill up the pupil and thus prevent communication, the aqueous fluid was not regenerated for several days, until, as it would appear, some communication was established between the two chambers. We have observed the same thing in accidental dislocation of the lens from injury.

“I have never,” says the author, “seen syphilitic iritis where mercury has not been previously given; and I therefore consider it a compound disorder.” This, however, is a theory which few will agree with, no more than the absurd assertion in the following page, that the colour of the sclerotic “zone in syphilitic iritis is highly characteristic; it is not pink, but like cinnamon, rusty, brown red; a circumstance which constitutes a good diagnostic mark between common and syphilitic iritis.”

The most defective portion of Mr. Morgan's work is that devoted to operations. The operations for cataract are disposed of in somewhat more than nine widely-printed pages, including a note from the editor; and the operations for artificial pupil in four! In extraction Mr. Morgan placed the patient in a recumbent posture, and had “the head firmly held by an assistant,” who raised the upper lid; but he does not inform us in what position the operator remained,—whether sitting, kneeling, or standing; and he omits to mention one of the most important preliminary steps, that of fixing the globe of the eye by the fingers of the operator before any attempt is made to transfix the cornea: this deficiency is, however, sup-

plied by his editor. He recommends the oblique section downwards and outwards, a most awkward one to perform, particularly with a long Wenzel's knife, as represented in the second figure of his fifteenth plate.

The entire of the after-treatment is disposed of in six lines and a half. In cases where the edge of the iris, or a portion of its surface, bulges over the knife in completing the section, we read much in modern books about various manœuvres to be practised for the purpose of freeing it from this position, such as rubbing the cornea with the finger's end, withdrawing the knife altogether and completing the incision with a scissors or bistoury, &c; while others recommend that, besides rubbing, the operator should try "to raise the eye, or, in other words, to draw it, as it were, a little out from the orbit, whilst, at the same time, he presses the cornea flat against the blade of the knife." "This," say the Messrs. Guthrie, in their work on Cataract, from which we have extracted this quotation, "is the other and the best half of the secret, and without he does which, he will not succeed in disentangling the iris." The cause of the wounding of the iris is generally timidity on the part of the operator, who hesitates, or in the slightest degree wriggles the knife, in passing through the anterior chamber. The consequences of shaving off a bit of the iris are very much overrated indeed; an irregular pupil will, no doubt, follow, but that is a matter of comparatively little moment, and not to be held in comparison with the results which may follow the bruising of the iris, or even exercising too great pressure upon it. An experienced operator, conscious of his own powers, should never hesitate, or withdraw his knife because the iris bulges over it. Our space will not permit us, however, to enlarge further upon an operation so meagrely described in the work under consideration.

To the chapter on Cataract Mr. France has added a note, describing the catoptric test, a means of diagnosis, which, as we have already stated, is most defective. Where are the instances of incipient opacity of the lens recorded, in which the disease was recognised by this test alone?

The publishers and the reading professional public are the fitting judges for the necessity of the republication of Mr. Morgan's work; but we confess we should prefer reviewing Mr. France more as an original writer than a commentator on the works of others. There is, however, a work upon the eye which we have long desired to see translated and published in English, and we feel assured Mr. France could do it ample justice; it is Beer's *Lehre von den Augenkrankheiten*," &c., originally

published in 1813, and which has had so great an influence upon the study and treatment of diseases of the eye in Europe.

The late John Morgan, the author of these Lectures, was an apprentice of Sir Astley Cooper, and commenced his professional career as a demonstrator of anatomy at a private school in the neighbourhood of Guy's Hospital, to which institution (Guy's) he was elected surgeon, conjointly with Mr. Key, in 1824. For many years he lectured on surgery in the Hospital, and to his exertions is mainly due the credit of establishing the Guy's Eye Infirmary, to which Mr. France has since succeeded. As a general surgeon and an operator Mr. Morgan was most justly esteemed, and has left some very valuable monographs on several important professional subjects. He died in October, 1847, in the fifty-first year of his age.

On the Nature and Treatment of Stomach and Renal Diseases ; being an Inquiry into the Connexion of Diabetes, Calculus, and other Affections of the Kidney and Bladder, with Indigestion.
By WILLIAM PROUT, M. D., F. R. S. The Fifth Edition, revised. London, Churchill. 1848. pp. 595.

AT the period when the pathology of the solidists was most triumphant,—when the forceps and scalpel were considered the chief instruments for revealing the causes of disease,—while the empire of medicine was still dazzled by the brilliant discoveries of Laennec, Brouissais, and Andral,—there was one physician, a man who had already a character of no mean eminence in science, but who stood aloof in the apparent progress of pathology, and who must have been regarded as a dreamy and antiquated enthusiast by the expert and smart anatomists who were so busily engaged around him. It was known that this man had attained a high reputation as a chemist, but in every other respect he must have seemed the relic of a former age. While the world were solidists, he was a humoralist; while other physiologists were the most absolute vitalists, he continued what had been reproachfully called “an iatro-chemist.” A few short years have passed by, and what a revolution has taken place in opinion. The most eminent pathologists now tell us that but little further assistance can be hoped from mere morbid anatomy; exclusive solidism is likely to be overwhelmed by a humoralism equally exclusive, and nearly as unreasonable; and the chemical lucubrations of Dr. Prout, which at one time only escaped ridicule from personal respect for the individual, have become, when disguised in another language, the fashionable

physiological doctrines of the day. We do not hear, indeed, so much of primary and secondary assimilation, or of reducing, converting, and vitalizing processes; but the ideas remain, although the words may have been changed. Dr. Prout has in truth been the parent of the new school of chemical philosophy. It must yield him no little gratification to experience, during his lifetime, the triumph of those principles, which he was the first to enunciate, and which so long remained isolated and unsympathized with. We willingly and gratefully offer him the meed of our respectful acknowledgment of his originality and genius. If in some instances his views are too circumscribed, and in others his generalizations too sweeping, these are faults always incident to a first inquirer. Minervas do not always spring fully armed and perfected, even from the head of Jove; and Dr. Prout will excuse us (for genius is usually ingenuous) if, while admiring his talents, we fairly criticise some of his opinions.

It may seem unnecessary, at the present day, to offer to our readers an analysis of a work so long known and so widely circulated as that, the fifth edition of which now lies before us. But as we design to canvass some of Dr. Prout's doctrines with respect to certain diseases, we think we are called on to afford such a view of his entire theory as may, at least, demonstrate what are the parts of it to which we object. We shall, therefore, give a concise analysis of Dr. Prout's views, which, as we have already stated, have given birth, in a great measure, to the chemical physiology and pathology, now so generally received.

This edition is divided into three books; the first treats of Functional Diseases, or "those diseases arising from the deranged operations, and less obvious lesions of the assimilating and secreting organs." The second, of Mechanical Diseases, or "those diseases arising from obvious lesions of organs, and from the presence of calculi, &c., in the bladder." The third book, which, in former editions, preceded the other two, is devoted to the exhibition of an outline of the general physiology and pathology of assimilation; and of the secretion of the bile and of the urine. We confess that we do not regard the change in the relative position of the latter part as an improvement in the present edition. For the understanding of many passages in the parts on functional and mechanical diseases, it is necessary that the reader should be acquainted with Dr. Prout's peculiar views, and especially with his particular and unusual phraseology; and these are only explained in this part.

Dr. Prout claims, and, we believe, justly, having been the

first to announce that animals, for the most part, receive their food in a form in which it already possesses the essential composition of their tissues :

“ We had previously known that the articles employed as food by animals, are essentially composed of three or four elements. But we have now learned, that all the more perfect of those matters on which animals subsist are compounds of *three or four proximate principles* ; all of which compounds, except one (the saccharine), are, in their essential characters, identical with the materials composing the frame of the animals themselves. We have also learned that, owing to this identity of composition, many animals are saved the labour of forming these proximate principles from their elements ; and have only to rearrange them as their exigencies may require. The task of forming the proximate principles is thus left to the inferior animals, or to plants ; which are endowed with the capacity of compounding these proximate principles from matters still lower in the scale of organization than the animals and plants themselves. Hence, there is a series, from the lowest being that derives its nourishment from carbon and carbonic acid, up to the most perfect animal existing : each individual in the series preferring to assimilate other individuals immediately below himself ; but having, on extraordinary occasions, the power of assimilating all, not only below but above itself in the system of organized creation.”—p. 464.

Taking milk as the type of a truly natural aliment, Dr. Prout considers that the proximate elementary and staminal principles of animals consist of four great classes, viz., the aqueous, the saccharine, the albuminous, and the oleaginous classes. Under the saccharine class he includes sugar, gum, vinegar, lactic acid, starch, lignin, and, in fact, all those principles which consist of carbon united to the elements of water ; the albuminous class contains not only albumen, but fibrine, caseine, gluten, gelatine, &c. ; and the oleaginous class comprehends not only the fixed and volatile oils, but likewise alcohol.

It is well known that the various organic substances enumerated are capable of undergoing many transmutations. Without alteration of composition, their properties may very much differ ; under the influence of ordinary chemical forces, they may change into totally new compounds ; and they are indeed the least persistent of known combinations. Even where, from the similarity of properties they have obtained a common name, they present themselves to us in nature under very many varieties ; thus the sugar of the cane, that of the grape, that of milk, &c., although all easily recognised as sugars, differ each from the others by many characteristic properties. Dr. Prout considers that, in many instances, these differences are due to variable

proportions of water combined in them, those containing the least water being the most firm or stable. To these he applies the epithets *strong* or *high*, while he calls those containing much water *weak* or *low*; thus we have strong alcohol and weak alcohol, strong sugar and weak sugar.

The change of a weak proximate principle into a strong one, Dr. Prout calls *completion*; the change of a low compound to a high one, or in other words, the combination with water, he calls *reduction*. The change of one proximate alimentary principle into another, he entitles *conversion*. It is absolutely necessary to keep these terms in mind, in order to comprehend his views of nutrition or of disease.

Thus he supposes the stomach to perform three functions as regards the aliment with which it is stored: these are *reduction*, *conversion*, and *vitalization*. The two former terms we have explained; the last is more difficult to comprehend, but by it is meant that the food acquires in this viscus those vital attributes which enable it subsequently to become part of the living system. The function of the lacteals is contrary to that of the stomach; it is *completing* instead of *reducing*, but it is also eminently *vitalizing*. The process of *completion*, or separation of water, is perfected in the lungs. All these processes, collectively, constitute what Dr. Prout terms *primary assimilation*. *Secondary assimilation*, being identical with what Liebig calls the *metamorphoses of tissues*, we need not stop to describe. It is enough for the present to say, that Dr. Prout originated the doctrine, that the various excretions, such as urea, uric acid, carbonic acid, &c., all proceed from the waste or destruction of structures which had once formed constituent parts of the organism.

This rapid notice of the chemico-physiological theory of Dr. Prout will enable our readers to comprehend his pathological opinions. The following quotation, from the commencement of the first book, will explain these opinions in his own words:

“ The proximate alimentary principles by which the existence of animals is maintained, though much modified by the assimilating processes, are essentially the same as those principles of which animal bodies consist. This important fact being now generally admitted, we have here to show, that the processes by which alimentary matters are assimilated in animal bodies are constantly liable to be deranged both in degree and in kind; that such derangements of the assimilating processes are manifested by corresponding derangements in the nervous products secreted from animal bodies by the organs designed for such purposes, and particularly by the kid-

neys and liver; and, lastly, that the relations between the deranged products of secretion and the proximate principles by which animal existence is sustained, and of which bodies consist, enable us, in many instances, to acquire a more correct knowledge of the organ deranged, as well as of the nature of the derangements, than can be obtained by any other means."

The above quotation developes, although in a very cautious and guarded manner, Dr. Prout's peculiar pathological views. The various excretions are the products of secondary assimilation; they proceed from the waste or destruction of tissues, which are themselves built up from a pabulum prepared by primary assimilation. If any of the functions which collectively constitute assimilation, viz., *reduction*, *conversion*, *completion*, *gelatification*, or the decomposition of albumen into gelatine and carbonic acid, under the influence of the respiratory process in the ultimate capillaries, *albumification*, or the change of the fluid albumen of the blood into the solid albumen of the tissues,—whenever any of these functions, we say, remain in abeyance, or are imperfectly performed, then the observer will find such an alteration of the excretions from their ordinary condition, as will point out the nature and kind of disordered functions.

It is obvious that, in accordance with the foregoing views, Dr. Prout necessarily regards abnormal modifications of the urine or other excretions as indicative of disorder of the assimilative functions performed by the various organs, particularly the stomach, rather than as evidence of local disease in the secreting gland. It is thus that he regards the connexion between diabetes, calculus, and other affections of the kidney and bladder, with indigestion. Diabetes, according to him, is the consequence of excessive activity of the reducing function, and diminished energy of the converting function of the stomach. The presence of oxalic acid in the urine depends on the converting functions of the stomach being wrongly performed, as a consequence of which oxalic acid is formed out of sugar in place of the proper pabulum for assimilation. The lacteals may be equally defective in the performance of their functions; they may not sufficiently convert and complete the chyle which they carry, and this chyle becomes consequently unfit for vitalization, and, being deposited in the lungs, gives origin to tubercles! Not only may primary assimilation be thus deranged, but you may also have secondary mal-assimilation; *gelatification* may be too much or too little active; the production of urea or lithic acid may take place in too great or deficient quantities. Frequently the observer may determine

the source of certain excretions, by the incidental mineral ingredients by which they are accompanied. Nay, by the relative quantities of these incidental mineral matters, there can be learned the degree of activity with which secondary assimilation takes place in certain tissues. Thus, the presence of abundant crystalline phosphates in the urine, indicates a rapid destruction of the nervous tissues.

Now a *diathesis* is a persistent mal-assimilation. As the morbid excretion is the index of the nature of this disordered function, the name of the excreted principle is prefixed to the diathesis as a trivial or distinctive appellation. Thus we have the saccharine diathesis, the oxalic acid diathesis, the lithic acid diathesis, the phosphatic diathesis, &c.

We have sought to lay before the reader, in the previous pages, as lucid and accurate a description as we are capable of effecting, of Dr. Prout's physiological and pathological opinions. We have been forced, from the limited space which the arrangements of this Journal permitted, to pass in silence many interesting details. We have omitted to express our opinions of many propositions necessary for the maintenance of this theory, from which we dissent. But we have endeavoured faithfully and impartially to explain the broad features of the pathological doctrines through which Dr. Prout connects the functional derangements of the stomach and kidneys. The simple questions are, if these views be borne out by clinical experience; and if they are calculated to facilitate the attainment of that principal object of physiological inquiry, the successful treatment of disease?

There never was a hypothesis, no matter how essentially absurd, which gained the attention and assent of considerable numbers, and which did not possess some portion of truth for its starting point. Homœopathy, hydropathy, even mesmerism,—none of these medical heresies are destitute of a greater or less number of ascertained facts, which appear to favour their pretensions. We do not attempt to include Dr. Prout's theory in the same category with the unphilosophical absurdities referred to; but we have alluded to them as extreme instances in illustration of the proposition, namely, that we are not entitled to infer the truth of a theory, because we happen to find it connect, in a felicitous manner, some admitted facts. Thus, it is true that disease of the cellular tissue is apt to occur in diabetic patients; and that the hypothesis that sugar in the urine in such cases proceeds from secondary mal-assimilation of the gelatinous tissues, most ingeniously explains this connexion. But we are not, therefore, to infer that the hypothesis

is the expression of a truth, no more than the observation of certain pseudo-syphilitic phenomena following the abuse of mercury ought to justify us in accepting all the ravings of Hahnemann. The advance of knowledge will generally develop the fallacies which lurk under such explanations. Thus, with respect to the coincidence alluded to, if a secondary mal-assimilation of the gelatinous tissues be the source of the sugar in diabetes,—and if, as Dr. Prout supposes, urea be the chief normal product of the secondary assimilation of these tissues, when healthily performed,—then the urea ought to disappear according as the sugar presents itself; the latter principle ought, in fact, to be vicarious of the former. This was actually, at one time, Dr. Prout's own doctrine, and, deceived by his theoretic prejudices, he was led to announce that the urea was always deficient in the urine of diabetes. This error was exposed by Sir Robert Kane, in the former series of this Journal, who demonstrated that the entire quantity of urea excreted by an individual labouring under diabetes, during the twenty-four hours, was fully equal to that passed in a state of health. Now, this fact once proved, the hypothesis in question necessarily falls to the ground.

Secondary mal-assimilation of the nervous tissues produces the phosphatic diathesis. But Dr. Bence Jones has shown that, in the great majority of diseases effecting the nervous centres, the urinary phosphates are unchanged in quantity; and Dr. Aldridge has demonstrated in the former series of this Journal, that the quantity of phosphoric acid secreted in cases of the so-called phosphatic diathesis, is usually less than in health or in other diseases.

But what practical benefit do we gain by bewildering ourselves among these misty diatheses? Have we not been long enough giving alcalies for the lithates, and acids for the phosphates; gorging the miserable diabetics with fresh meat; and combating symptomatic phantoms, while the natural realities of disease are eluding our observation. The existence of certain essential diseases is now too well established to be denied, and, fortunately, it is their nature in many instances to limit their duration; so that if the systemic powers be supported, and local complications be avoided, ultimate restoration may be hoped for. But, in essential diseases, your patients recover; for the most part they are not cured: your therapeutical resources are, in such cases, palliative, and not aggressive. Ague is, certainly, a remarkable exception to this rule; and the complications of essential diseases are often capable of being combated successfully; but in the great majority of these diseases, in

typhus, scarlatina, small-pox and measles, scurvy, purpura, and syphilis, you can do little more, in their simple forms, than to support the strength and watch for complications. The diseases you can really cure, with definite views and assured remedies, are local diseases; and for this reason, the pathologist who can with truth transfer a disease from the essential, to the symptomatic category, confers an enormous practical benefit on the therapist. We look on the discovery that simple inflammation, whether acute or chronic, changes the chemical reaction of the urine on test papers,—or that the secretion of organizable albumen from a mucous membrane is an evidence of acute, while that of pus or mucous globules is a sign of chronic inflammations,—we regard, we say, the determination of these simple and intelligible facts as of infinitely greater practical importance to the physician than the sublimest theory that ever emanated from the most ingenious physiological speculator. This may show us to be very superficial, nay, narrow-minded and grovelling; but we are glad to find such men as Rayer, Becquerel, and Lecanu, Bird, Christison, and Brodie, coinciding, by the evidence of their labours, in our estimation of simple facts, judiciously observed and *generalized*.

We honour the originality, genius, and industry of Dr. Prout; we do not agree with many of his peculiar theories; yet we strongly recommend his book to the practical physician. This recommendation is indeed unnecessary as to a book which the profession has so long stamped with its approbation. In truth, the descriptions which it contains of disease are usually excellent, and the treatment recommended is, for the most part, judicious and admirable; and in no respects more so than in those instances in which his experience prompts him to prescribe in direct opposition to the tendency of his own doctrines.

Lectures on the Physical Phenomena of Living Beings. By CARLO MATTEUCCI, Professor in the University of Pisa. Translated under the Superintendence of JONATHAN PEREIRA, M.D., F.R.S., &c. London, Longman. 1847. pp. 435.

THE publication of this translation has constituted a very important addition to our literature. We wanted much an easy and familiar exposition of the discoveries of modern science, in their applications to physiology. But in this instance, as in many others, it requires no mean qualifications to write a sim-

ple and popular treatise. In truth, an author must be master of his subject who would attempt to write a Manual. How often do we meet with handbooks on this or that subject, which have been evidently written by persons crammed for the purpose, and who had manifestly struggled from frontis-page to finis, "with chaos and blunders encircling their heads," proceeding from the fumes of mental indigestion. But Signor Matteucci is the individual most eminently qualified, from education and habits, for the task which he has undertaken in this instance. His researches on many of the most important applications of physical science to the explanation of the phenomena of organized beings, have long been before the scientific world; and the present volume shows that he can write for the student just as appropriately as for academies and institutes.

We shall make two short extracts, to demonstrate how far this eminent physician is from that exclusiveness which had hitherto been the bane of physiology:

"Examine those phenomena of living bodies, which, if I may be permitted so to call them, are *the most physical, the most chemical*, and you will find considerable differences in the mode of action of physical and chemical agents in the organism,—differences which are inexplicable in the present state of our knowledge of the laws governing these forces. Does not the phenomenon of vision itself, which may be termed a purely physical phenomenon, present peculiarities which remain up to the present moment unexplained? If the latest discoveries in science enable us to account for the distinctness of vision at all distances, and the absence of colour on the edges of the image, how, by the aid of physical laws, can we explain the perception of a single object in its natural position, by a double and inverted image? What could we not say of hearing and the voice, which are simply effects of some particular vibration of the air, propagated by solids, according to the general laws of acoustics? To questions such as these science can give no completely satisfactory answer."—p. 7.

"If Newton had called the force which rules the wondrous system of the celestial machine, merely attraction, or attractive force, his name would long since have fallen into oblivion; but by demonstrating that attraction is exercised in the direct ratio of the masses, and in the inverse ratio of the squares of the distance, and by thus unfolding the eternal laws of this force, Newton has rendered his name immortal."

"To speak of the vital forces, to give them a definition, to interpret phenomena by their aid, and yet to be ignorant of the laws which govern them, is doing nothing, or rather it is doing what is worse than nothing. It is to attempt an impossibility, it is to content the mind to no purpose, to stop the search after truth. To state that the liver separates the elements of the bile from the blood by

means of the vital force, is nearly to assert that the bile is formed in the liver. By thus varying the expression a dangerous illusion is established.”—p. 13.

These sentiments, so well expressed, are those which should always guide the physiologist in his researches. It only remains to say, that, as might be expected, Dr. Pereira has proved a most judicious editor.

Pocket Dispensatory and Therapeutical Remembrancer, comprising the entire Lists of the Materia Medica, Preparations and Compounds, with a full and distinct Version of every practical Formula, as authorized by the London, Edinburgh, and Dublin Royal Colleges of Physicians, in the latest Editions of their several Pharmacopœias, to which are subjoined copious relative Tables, exemplifying approved Forms, under which compatible Medicines, &c., may be contemporaneously combined, &c. &c. By JOHN MAYNE, M. D., L. R. C. S. Edinburgh. London, Churchill. 1848. Post 8vo., pp. 271.

PRINTED in Edinburgh and published in London, a more useless medical publication has, we think, rarely, if ever, issued from the press of either city. It purports to be a “Ready Reckoner” for the prescriber as well as the dispenser of medicines, but the information that either will find in it is of so commonplace a character, and frequently so very erroneous, that an apothecary’s apprentice, of even two years’ standing, would, we venture to say, be a better authority.

To prove that we are not speaking too harshly, we shall refer to the very first medicine noticed in the book,—*tartar emetic*. And first, in what class of remedies do we find it placed? Under the head of alteratives or deobstruents! If a student at his examination gave us such an answer, we would be almost inclined to reject him. But what is said about this most valuable medicine?—

“*Use.*—(*Intl.*). In chronic dyspepsia (combined with opium it has been found highly serviceable in delirium tremens), pneumonia, pleurisy (after employment of venesection), cutaneous diseases. Dose $\frac{1}{2}$ – 1 grain, generally combined with other medicines.”

With the exception of the officinal names, this is the sum total of the information about tartar emetic to be found in Dr. Mayne’s book, announced in the preface to be “an abridged *practical* formulary of the three British Pharmacopœias.”

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

THE DIGESTIVE SYSTEM.

1. DR. WOODROOFE exhibited a *papier maché* cast of a peculiar form of hepatic disease, and read the following explanatory communication from his friend, Dr. F. Oliffe, of Paris :

“ *Observations on a peculiar Case of diseased Liver.*—I beg to present to the Pathological Society of Dublin the cast of a liver affected with a peculiar disease, one which, I believe, has not yet been described by authors. I have denominated it ‘Purulent Catarrh of the biliary Ducts.’ The following is a brief statement of the case, which occurred in my private practice :

“Mr. —, aged 46, of a robust constitution, had enjoyed uninterrupted health, with the exception of an attack of ‘jungle fever,’ which he experienced in Bengal, about twenty-five years since. At that period, according to the report of the patient, no symptoms of acute hepatitis appeared. On his return from the East, Mr. — complained of nausea which incommoded him in the morning fasting, but which, though it continued for several years, did not seem to impair his general health. About eighteen months before I saw him he was seized at Venice with intermittent fever, the type of which is not mentioned, and which yielded to the exhibition of sulphate of quinine. Four months afterwards he was attacked with jaundice. Having recovered, he removed to England, where he continued to reside for twelve months, during which time his health was excellent. He came to France in the month of November, and towards the middle of December he was seized with a febrile paroxysm (rigor, heat, perspiration), which was succeeded by a complete loss of appetite, and general debility. I was called in on the 1st of January. His face was pale, and presented a slight ictetic hue; the sclerotic was faintly tinged with yellow; he had no appetite; the tongue was covered with a thick yellowish fur; the urine was saffron-

coloured, but the alvine discharges were normal, both in colour and consistence. The hepatic region offered no prominence; but, on percussion, I found that the liver extended abnormally into the thorax, although its inferior border did not pass the ribs. The remaining abdominal viscera appeared to be sound; and no abnormal phenomena could be detected either in the lungs, or in the heart. The febrile paroxysms, which were renewed at irregular periods, were similar, in every respect, to those of intermittent fever. In order to stimulate the hepatic functions I prescribed pills containing calomel, colocynth, and hyosciamus. I also directed frictions with the unguent. hydrarg. over the hepatic region. This treatment produced little or no amendment, and I determined on administering the sulphate of quinine. I was surprised to observe the fever, which had heretofore been irregular in its character, assume the tertian form. The sulphate of quinine seemed at first to produce wonderful results. In ten days the paroxysms had ceased; the tongue became clean; and the patient was much gratified at this favourable change. But the improvement was of short duration; the fever soon returned and became continuous, with evening exacerbations; the tongue became dry; the general debility was considerable, and the patient rapidly lost flesh. There was no pain whatever in the hepatic region, either during this or any subsequent period of the disease.

“Dr. Chomel and Sir R. Chermiside having been called in consultation, diagnosed an organic affection of the liver, but were unable to specify its nature. A slight effusion having taken place in the peritonæum, diuretics were employed, but without success. On the 4th of February, about seven weeks from the invasion of the symptoms, diarrhœa supervened, the debility became extreme, and in a few days afterwards the patient expired.

“*Autopsy.*—Abdomen. The stomach was distended with gas, and the left lobe of the liver was rather prominent in the epigastrium. The peritonæum contained about a quart of citrine-coloured serum. The liver was the subject of our special observation. Its inferior margin did not extend beyond the ribs, but superiorly it was enlarged; it pushed up the diaphragm considerably into the thorax, and reached to the level of the *fourth* rib. A finger introduced into the transverse fissure, produced a rupture of the hepatic tissue, from which issued about $\frac{3}{4}$ vi. of yellow creamy pus. We then detached the liver and examined it. In the middle of the superior surface of the right lobe was a circular eminence of a dark brown colour, studded with black spots. On incising this tumour a quantity of pus oozed through numerous orifices; and the same occurred after the incisions made in different parts of the organ. A female catheter introduced into several of these orifices penetrated into ramified canals, which were found to be biliary ducts. In order to form an accurate knowledge of the source from whence the pus was furnished, we placed the liver on its convex surface, and, taking the ducts at the fissure, we pursued them in their divisions. They were much dilated, and *all* contained pus coloured with bile. Their mucous mem-

brane was softened and of a black colour; the gall-bladder contained a small quantity of dark-coloured bile, and four small calculi; its mucous membrane was red, and rather softened; the vena porta and the hepatic veins were next examined, and were found to be *perfectly sound*; the parenchyma of the liver was likewise healthy; the spleen was normal; there was no pathological alteration in the stomach nor intestinal canal; the heart was rather large; the pulmonary parenchyma remarkably sound. The other viscera presented nothing worthy of observation.

“From what precedes I conclude,

“1. That the liver alone, among the organs, was pathologically affected.

“2. That the anatomical lesion occupied primitively and exclusively, the biliary ducts, in their passage through the hepatic substance.

“3. That it was impossible to recognise, during life, a lesion so singular, and so obscure.

“J. F. OLIFFE, M. D.,

“Late President of the Parisian Medical Society; Member of the Anatomical Society of Paris, &c.

“2, Rue St. Florentin, Paris.”

—March 8, 1845.

2. *Peritonitis consequent on Ulceration of the Appendix Vermiformis*.—Dr. Lees presented a recent specimen of perforation of the vermiform appendix. The subject of the case, a robust young woman, aged 20, who had suffered from pain in the abdomen and occasional vomiting six weeks ago, was suddenly attacked by severe pain in the ilio-cæcal region, on the evening of the 11th March. This pain, which had not been preceded by rigors, rapidly extended over the abdomen. On the following day (12th March) she took some castor oil, part of which she rejected by vomiting. The bowels were, however, moved, but the vomiting continued; the matter thrown up was of a dark red colour. Medical advice was then procured, but the symptoms increased in severity, the abdomen became swollen and very painful, and the vomiting more urgent and distressing. Under these circumstances she was brought into the Meath Hospital on the evening of the 14th, and on the next morning was seen for the first time by Dr. Lees. She was lying on her back, with her knees slightly drawn up, her countenance anxious and livid, tongue dry and furred. Her thirst was intense, and she was vomiting every few minutes, and without much effort, a fluid of a light brown colour, of which there was sometimes but a mouthful, at others as much as half a pint. The bowels were confined, the surface of the body cold and clammy, the abdomen tympanitic, and painful on pressure. The pulse was imperceptible at the wrist, but could be felt in the brachial artery; the action of the heart was regular, and both its sounds audible; its contractions were 103 in the minute. She complained that she had no sleep since her illness commenced. Dr. Lees considering that perforation of the intestine had occurred, and that the case was now

hopeless, merely directed a pill containing a grain of opium to be given every hour, and also stimulants to promote reaction. The patient died at 2 o'clock on the morning of the 16th.

Autopsy.—The usual results of acute peritonitis were obvious immediately on laying open the cavity of the abdomen; the omentum was vascular, and coated with lymph; the intestines were distended with air, and there was lymph deposited on their peritonæal surface: some fluid effusion was found in the pelvic region. The question now occurred, what was the cause of the peritonitis? The patient had described the pain to have commenced in the ilio-cæcal region; careful search was therefore made in this situation to discover the primary lesion to which the inflammation had succeeded. The appendix vermiformis, near its junction with the intestine, presented a large, sloughy-edged ulceration which had perforated the tube. On laying open the appendix, there was discovered in its remote extremity another ulcer, which, however, had not perforated. In the cæcum there were some superficial ulcers.

Dr. Lees remarked, that in this case no concretion was found within the appendix, contrary to what has been observed in many similar cases. The situation of the appendix in these cases is a matter of some importance, as Dr. Burne has observed in the *Medico-Chirurgical Transactions*, vol. xx.; because when it lies across the psoas muscle it may become adherent, and if an abscess forms it may point externally, or it may become connected to some portion of the intestinal tube, into which it may open and evacuate its contents.—*March 22, 1845.*

3. *Rupture of the Spleen from external Violence.*—Mr. Hamilton exhibited a specimen of rupture of the spleen, the result of accident, and gave the following history of the case:

E. White, aged 17, a sweep, fell down the inside of a chimney on the 14th of March, 1845, and in the fall was struck in the epigastric region by a projecting brick. He was slightly stunned, suffered intense pain, and shortly after the occurrence of the accident was attacked with vomiting. These symptoms, attended with ardent thirst and total loss of rest, continued until his admission into the Richmond Hospital on Tuesday the 18th. His bowels had been acted upon several times since the receipt of the injury, but no blood was observed in the discharges either from the intestines or from the stomach.

When admitted he exhibited signs of great depression. He was scarcely able to stand without assistance; his extremities were cold; his skin had a yellow tinge; his pulse was 73, feeble, irregular, and intermitting. He screamed with pain, and the epigastric region was tympanitic and exquisitely tender to the touch.

19th, Wednesday. He slept a little last night, but frequently awoke and started up in terror. He now raves almost incessantly, and mutters frequently to himself: the tenderness of the abdomen has become more extended, and the tympanitis has increased. He died at 3 o'clock this day, the sixth after the receipt of the injury.

Autopsy.—On laying open the cavity of the abdomen, the peritonæal surface of the intestines appeared injected, but there was no effusion of lymph or pus. There was, however, a considerable effusion of bloody serum, and when the stomach was raised, a large quantity of black blood was seen; and, upon further examination, there was discovered a transverse rupture of the spleen at its upper and inner part: the serous and fibrous coverings of the organ were torn to the extent of three inches. There was some bloody serum in the pericardium.

In this instance the symptoms were those of effusion into the abdominal cavity; but Mr. Hamilton, on carefully examining the case, along with others which had been recorded, could not fix upon any one symptom pathognomonic of the particular lesion which had occurred. The vomiting, which was so constant a symptom in this case, forms an equally prominent feature in lesions of other abdominal viscera.—*March 22, 1845.*

4. *Stricture of the Colon.*—Dr. Law exhibited a specimen of stricture of the colon, taken from the body of a woman aged 32, but whose haggard appearance would have made him suppose her at least 50. A month previous to her coming under Dr. Law's care she had been treated for dropsy, which disappeared, but on its disappearance diarrhœa supervened, which the physician under whose care she had been attributed to the use of imperial or cream of tartar water, an opinion which Dr. Law conceived to be very probable from the symptoms she exhibited when he first saw her. Her tongue was of a bright red colour, such as intimates gastro-intestinal irritation; and when he attempted to ascertain, by pressure, if the parts within the abdomen were in a state of irritation, he was in a great measure prevented by the rigid contraction of the abdominal muscles. This, however, he took as an indirect proof of the existence of intestinal irritation, regarding it as the result of a true reflex action. Her diarrhœa was very distressing. Leeches and poultices applied to the abdomen, with opiates and astringents, afforded considerable relief for several days. However, at the end of a week she complained of a great increase of pain in the abdomen, for which Dr. Law directed a large number of leeches to be applied. She, however, would not consent to have them put on, alleging that stupes, which had been directed to be applied first, had almost entirely removed the pain. She only survived this examination of her symptoms about thirty-six hours.

Post mortem examination discovered an effusion of about three ounces of pus in the pelvis. There was a quantity of lymph spread on the intestines. The visceral peritonæum was very vascular, and the intestines themselves had the thickened feel that they so commonly have in peritonitis, and which is due to effusion into the subserous cellular tissue. The mucous membrane of the small intestine, through its entire extent, was highly vascular. This vascularity did not extend to the large intestine. The transverse arch of the colon was much larger in its calibre than

usual, but where this portion meets the descending it was so contracted as not to admit the point of the little finger. The stricture Dr. Law attributed to a cicatrix where ulceration had formerly existed, and had identified the matter of cicatrix with the fibro-cellular structure developed in the liver, kidneys, lungs, &c., and in all these situations exerting its contractile property on the organs, and provoking in them modifications not alone of form but also of function, and thus giving rise to phenomena varying according to the organ in which such structure is developed. Its development in the different canals, through which different materials upon whose elimination from the system its well-being depends, gives rise to the most serious consequences, as in the instance in question. It is this anatomical element also, which, constituting the material of the cicatrix in burns, by its contraction so often produces deformities and inconvenience, to correct which the efforts of surgery are so unsuccessfully employed. Microscopic observation has established the identity of the structure developed in these different situations, and under such different circumstances, proving that there is in them all the same mode of growth, the cell in all becoming elongated in two opposite directions so as to acquire a spindle shape, and in the progress of its growth the acuminate process of this spindle-shaped cell being further lengthened till fibres were formed.

Such is Schwann's description of the formation of cellular tissue in the foetus. A similar transformation of cells into fibres has been observed in the production of the fibrous tissue of false membranes, and also in granulations. Eichholtz, speaking of cirrhosis of the liver, calls it "the liver provided with cicatrix tissue."

Dr. Law alluded to the contracted portion of the intestines situated below the stricture; and this contraction he attributed partly to the small quantity of faeces that now habitually traversed it, but mainly to an extension of irritation of the mucous membrane (the condition of this membrane yielding abundant evidence of such irritation having existed) to the submucous cellular tissue, and its consequent transformation into fibro-cellular tissue. It was, in fact, the same formation as that which constituted the stricture, but less developed.

This woman had been in hospital four years ago, for an abdominal affection marked by local tenderness, for which she had had frequent applications of leeches and fomentations. She also had irritable stomach and constipated bowels. There was no note then taken of her case, but reference to the prescription book warranted the conjecture that the original irritation existed so far back as that time.—*December 20, 1845.*

5. *Strictures of the Œsophagus.*—Dr. Kirkpatrick exhibited an Œsophagus, in which two strictures existed, one at the pharyngeal, the other at the cardiac extremity of the tube, the intermediate portion of which was healthy. The patient, James Mahon, aged 50, only applied for medical assistance four months before his death, and when Dr. Kirkpatrick first saw him, the usual symptoms of stricture of

œsophagus were present ; he could, however, swallow liquids. The pharynx had an inflamed appearance, and there existed so great an amount of tenderness upon pressure about the upper part of the œsophagus as to lead to the suspicion that ulceration had been established. After some time he completely lost the power of swallowing liquids, and it became necessary to support him by means of injections of broth, &c. He died of an attack of acute pneumonia.

The *post mortem* examination showed that the strictures were not produced by any malignant growth, but were the result of the deposition of scrofulous matter in the submucous cellular tissue. A middle-sized catheter could with difficulty be passed through the contracted portions of the tube.—*December 20, 1845.*

6. *Intussusceptio*.—Dr. Harrison exhibited an example of a very rare form of this disease, and gave the following history of the case:

James Kavenagh was admitted into Jervis-street Hospital 16th of June, 1844. He resided about ten miles from Dublin, and had been under the care of my friend, Dr. Gason, of Enniskerry, from whom I received the following particulars of his illness :

“ He had been in the enjoyment of good health until about six weeks since, when, having been exposed for several hours to wet and cold, being engaged in washing sheep in a river, he was seized on the following day with violent spasms in his bowels, principally in the course of the colon ; his sufferings were very intense, though with such remissions as to allow him to occasionally resume his labour for a short time ; a return of the violent spasms, however, would compel him to desist. About three weeks since he had such an attack ; he had frequent bilious vomiting, and violent colic pains in the bowels. About this time also he suffered from suppression of urine, and most urgent spasmodic pains in the lumbar region. The catheter was introduced, but not more than a tea-spoonful of clear urine flowed. An anodyne was administered, and in a short time he passed a large quantity of clear urine. He continued for several days in this state of severe suffering from spasm in the bowels, and violent vomiting, with occasional almost perfect intermissions for several hours together. On Saturday last he was seized with a very violent attack of pain and tenesmus. Within the last few days his urine has been scanty and high-coloured ; the bowels have been in general obstinately costive from the commencement of the illness, though occasionally an attack of griping and diarrhœa sets in ; the discharge is thin, brownish, and very fetid ; the pulse has not passed 72, and has generally been soft and full. From the commencement to the present time, the treatment has been varied according to the symptoms : venesection, leeches, and cupping ; purgative enemata and opiates ; turpentine, fetid and tobacco injections, and calomel continued in small doses to salivation. Although these several means frequently relieved urgent symptoms, yet they have effected no material improvement, and within the last few days his strength and general health have rapidly declined, and he is now anxious to be admitted into hospital.”

On admission into hospital I made a careful examination of the abdomen, and detected a tumour between the stomach and umbilicus, moveable, and painful on pressure: the man appeared much emaciated, and presented many of the characters of one labouring under some malignant visceral disease. He stated that occasionally he was free from pain; and whenever he had an evacuation of fluid or air from the bowels he felt great relief; that the desire to do so was occasionally most urgent, and the pain insupportable until it was accomplished. Before his efforts for this purpose could succeed, his sufferings were very violent, not only about the umbilicus but all over the abdomen, and were frequently attended by vomiting. He sometimes felt a natural and even an urgent desire for food, but was latterly almost afraid to indulge it, as he found that very generally he suffered an attack of spasms and vomiting in some hours afterwards. I felt very uncertain as to the nature of the disease. I was disposed to regard the tumour as seated either in the omentum or in the walls of the colon. It is unnecessary to detail all the particulars of the treatment which was adopted; I shall merely observe, that the only remedies which afforded even temporary ease were large opiates, frequently administered, and mild aperient enemata. We generally succeeded in obtaining some evacuations from the bowels every day, or every second day, but the discharge was at all times thin and scanty, and never contained any solid faecal matter.

He remained in hospital under my care for one month, and feeling that he was gradually losing his strength, he was anxious to return home to end his days with his family. On his discharge I directed him to place himself again under Dr. Gason's care in the country, which he accordingly did.

Dr. Gason reports to me that he continued in much the same state as before for about a fortnight, except that his general health and strength very rapidly declined. A few days previous to his death he had diarrhœa; the urine, which had been abundant, became very scanty, and for some days previous to his decease, ceased to be secreted; he continued free from fever, his pulse never passing 72. Forty-eight hours after death the body was examined. On opening the abdomen the stomach and bowels appeared unusually distended, chiefly with flatus and fluid, there being very little solid matter. There was no appearance of general inflammation in the peritonæum or intestines, except about the transverse and left colon, a little below the stomach. Here there appeared a firm tumour, of a dark, congested appearance: the omentum about it was much thickened and corrugated. This tumour evidently involved the colon, but was limited to a short portion of it. Dr. Gason removed it, first dividing the transverse and then the left descending colon. As the relations and friends were present he could not make any special examination of this mass, but on the following day he sent me the parts he removed, which I have carefully examined, and an accurate description of which is here subjoined.

The preparation itself is in the Anatomical Museum of Trinity College. On opening out the omentum, as far as its thickened condition would admit, the colon came into view, the large tumour on which was caused by an intussusceptio of a considerable portion of it, the lower or left colon being drawn upwards into the transverse portion, a direction quite unusual for an intussusceptio of any part of the intestinal tube to take, as in almost all cases it is the upper portion of the tube which is received into the lower; the colon on either side of this was tolerably healthy, but through the extent of the tumour, which was about four inches long, the intestine was hard, thickened, and of a very dark colour, but by no means in a gangrenous state. On opening the colon in its transverse or right portion, the protrusion of the lower or left portion was very distinct; it projected for at least an inch and a half, and was surrounded by a deep narrow sulcus between it and the enclosing portion: it was not unlike the appearance of the os uteri projecting into the vagina. Near the centre of this projection a small irregular orifice was observable, partially covered by a ragged, ulcerated, mucous surface. A flexible bougie passed into this was conducted, with a little management and pressure, through the tumour in a tortuous course, and appeared in the cavity of the left descending colon. The length, the narrowness, and tortuosity of this passage satisfactorily accounted for the difficulty of obtaining any solid alvine evacuation. The mucous surface of the invaginated portion of intestine was ulcerated, with a few dark shreds hanging from it, but there was no tendency to gangrene, as had occurred in some recorded cases of ordinary or progressive intussusceptio, in which several inches of the intestine have been discharged, and life preserved; in this case there was rather a tendency to remove the included portion by the process of ulceration.—*January 17, 1846.*

7. *Follicular Disease of the Intestines.*—Dr. Law said the specimen of diseased intestine which he now exhibited had been taken from the body of a young woman who was admitted into Sir Patrick Dun's Hospital on the 27th, and died on the 30th of the present month. Her mind was wandering on her admission, so that no information could be obtained from her; and the only account which the person who brought her to the hospital was able to give was, that her illness had begun eight days previously, with rigors, followed by febrile symptoms, consequent on exposure to cold. Shortly after her admission diarrhœa set in, together with involuntary discharges: the pulse was 140, and presented the character to which the term dichrotous is applied; the heart's action was very feeble; the abdomen was not tympanitic or painful on pressure; there was no gargouillement over the ileo-cæcal region, nor any red spots over the surface of the abdomen. On the 30th she was suddenly attacked with severe dyspnœa; a considerable quantity of blood frothed from the nose and mouth; and in an hour afterwards she was dead.

Autopsy.—On examination after death, both lungs were found

infiltrated with blood to a greater degree than Dr. Law had ever seen in any previous instance of pulmonary apoplexy. The heart and its valves were healthy; the muscular structure of the organ was remarkably firm. The different portions of the small intestine were then laid open in succession, commencing at the pylorus, but there was scarcely any appearance of disease until the ilium was approached: here the intestinal glands were found more in relief than natural, forming elliptical patches, whose long axis corresponded with the length of the intestine; lower down, these glandular masses became still more projecting, until, at length, they resembled the prominences of button scurvy. In some places they presented elevated edges and depressed centres, like the pustules of small-pox; and, further on, many were in a state of ulceration, the ulcers becoming larger and more numerous the nearer to the termination of the ilium they were situated. Their surfaces seemed to consist of cellular tissue in a state of slough. The mesenteric glands in the immediate proximity of the ulcers were enlarged and red. These appearances ceased at the ileo-cæcal valve; on the cæcal aspect of which there was scarcely any trace of disease. Dr. Law remarked that he had never seen so great an amount of disease established in so short a period as in this case, the entire duration of which was only eleven days.

It was stated by Louis, that he had always found this species of lesion to be accompanied by considerable tympanitis, diarrhœa, gargouillement over the ileo-cæcal region, and red spots over the surface of the abdomen; but, in the present case, all these symptoms, with the exception of the diarrhœa, were absent.—*January 31, 1846.*

8. *Appearance of the Intestines in a Case of Fever.*—Dr. Greene observed that, as Dr. Law had just exhibited a well-marked specimen of dothinerterite in a case of fever, he would take the opportunity of contrasting with it the morbid appearances of the intestine in a man who died in the Hardwicke Fever Hospital. In Dr. Law's case, the usual symptoms of the local affection, so accurately described by Louis, were not present,—to the same extent, at least, as usually occurs. These symptoms, general and local, are shortly as follows:—diarrhœa preceding the fever for some days, the discharges presenting an ochrey colour; deep-seated pain, with an appearance of fulness, and the development of gargouillement on succussion in the ileo-cæcal region; sudamina thickly scattered over the region of the valve, with red patches over the rest of the abdomen, which is in the state of meteorismus. These local symptoms, with a weak pulse and profound prostration, and an indifference to surrounding objects, constitute a group of phenomena which Louis found so constantly in connexion with follicular disease, as to lead him to suppose they were almost pathognomonic of the lesion of which Dr. Law had just exhibited a specimen. Dr. Greene stated that he considered Louis's description so accurate, that, whenever he met the group of phenomena just detailed in

fever, he invariably inferred that follicular disease of the intestine existed; and, in the case he was about to detail, the absence of these symptoms induced him to state that the intestine would not be found in the diseased condition described by Louis.

In the present instance the patient was attacked with the usual symptoms of the exanthematic typhus fever of this country. He recovered from the fever, but it was observed that his convalescence was slow and imperfect. Dr. Greene here remarked that, whenever this occurs, there is reason to fear that the impediment to recovery is owing to some local lesion, either setting in with the fever or developed during its progress, which lesion may be situated in any of the cavities. In this case the patient complained a little of tenderness in the abdomen, but there had been no diarrhœa, and the motions were not unhealthy-looking; the abdomen was retracted, and its surface dry. The tongue was red and the patient complained of thirst. These were the principal symptoms, and he would now exhibit the intestine. The mucous membrane was highly vascular, particularly for some distance above the ileocæcal valve, but there was no enlargement of the glands, far less any appearance of ulceration; the membrane was soft, and the vascularity occupied the whole area of the intestine: neither were the mesenteric glands enlarged.—*January 31, 1846.*

9. *Stricture of the Rectum; Communication between the Intestine and the Bladder.*—Mr. Hamilton exhibited a preparation taken from the body of a person who, during life, had passed fæces from the bladder. He was attended by Dr. Nalty, and had been seen at different times, in consultation, by Sir Philip Crampton, Sir Henry Marsh, and Mr. Hamilton. He was sixty-eight years of age, not emaciated, but presenting that peculiar sallow aspect that persons affected with malignant disease often have. When Mr. Hamilton first saw him in June last, he complained of pain and frequent desire to pass water; and, on examining the urine, yellow feculent matter was seen at the bottom of the vessel. He had been ill for some time, but had only a few days before felt a sense of uneasiness and weight, referred to the bladder, soon after which the urine deposited a thin, puriform matter, and then followed the feculent discharges from the urethra.

It was supposed that some malignant disease existed, causing a communication between the bladder and rectum; but a more specific diagnosis was not ventured upon. Mr. H. washed out the bladder with a little tepid water, but this was followed by so smart a hæmorrhage that the operation was not repeated. The passage of fæces from the bladder continued for a considerable period, attended occasionally with a good deal of uneasiness; but, at other times, the urine became pretty clear. The patient experienced much relief from injections of tepid water into the rectum. Last summer he was attacked with apoplexy, the state of coma lasting several days; he recovered from this attack, but the fæculent discharge from the urethra continued. He next became affected with cough, and latterly with severe fits of dyspnœa. The pulse was feeble and very

irregular. Three days ago he had a second apoplectic attack, which soon proved fatal.

Autopsy.—Corresponding to the termination of the sigmoid flexure of the colon and commencement of the rectum, there was found a contraction, caused by the deposition, in the submucous cellular tissue, of a scirrhus substance, of a bluish grey colour, crossed by fibres at right angles to the bowel, about an inch or more in thickness at the seat of the stricture. The contraction was so great at one part, as with difficulty to admit the little finger. About a quarter of an inch above this, the mucous membrane formed a projection constituting a kind of valve, above which the fæces lodging, had caused ulceration of all the tissues of the bowel, and adhesion between the rectum and bladder: an abscess had formed, and had opened into the bladder at its posterior part. The opening between the intestine and the bladder was not direct, but by a sinuous passage, three inches long, and so narrow that, though the bladder contained much fæces, it was not without difficulty that the opening into it was discovered. The valvular nature of the communication explained the fact that no urine was observed to pass by the rectum; as the effect of the distension of the bladder would be, as in the case of the ureters, to close the opening, and prevent the passage of fluid through it. The mucous membrane of the bladder was very little redder than natural. Near the opening from the intestine was another, leading for a short distance between the two cavities. One very remarkable feature in the case was, that during the whole period, from June to March, the patient never had a symptom of obstruction of the rectum,—a circumstance which Mr. H. thought might be referred to the fact of the bladder having acted, to a certain extent, as an evacuant of the contents of the bowel.

There was some hydrothorax; the lungs were slightly emphysematous and congested; and the left ventricle of the heart was hypertrophied and dilated: there was no valvular disease.—*February 28, 1846.*

10. *Scirrhus of the Pancreas, and chronic Ulcer of the Stomach.*—Dr. Lees presented to the Society a specimen taken from a man aged 65, who died at the Meath Hospital during the past week. He was admitted into the hospital labouring under jaundice, and appeared in an almost moribund condition, so much so, that Dr. Lees was requested by his friends to see him as soon as possible. His skin was of a yellowish-green hue; he complained of pain in the right hypochondriac and epigastric regions, where a tumour, or rather a general enlargement, was observed, slightly tender to the touch, and extending as low as the umbilicus; vomiting and hiccough were present, and the bowels were constipated: there was no ascites nor pain in the shoulder. The history of the case was altogether rather obscure. He stated that he had not been addicted to drinking, but had been subject for the last twelve months to dyspepsia, and only for the last three weeks felt pain, since which time he had become jaundiced.

From the peculiar dirty green colour of the jaundice, the great emaciation, the age and general appearance of the patient, it struck Dr. Lees that malignant disease existed, and that the liver was the seat of it; but, on further examination, doubt arose on this point, as the symptoms might be accounted for by a chronic duodenitis, with enlargement of the liver. This man died very soon after his admission into the hospital.

Autopsy.—On opening the abdomen, the gall-bladder was seen enormously distended, so much so as to extend in front into the right lumbar region in front of the kidney.

The liver was greatly increased in size, and contained one scirrhous tubercle. The head of the pancreas was greatly enlarged, and converted into a scirrhous structure; it was intimately united to the concavity of the duodenum, the mucous membrane of which was here destroyed. The common duct was dilated to an immense size. During the ten days that the patient lived in the hospital, no appearance of salivation manifested itself: this was a point he considered worthy of observation, inasmuch as the occurrence of profuse salivation had been laid down as characteristic of disease of the pancreas.

Another lesion, Dr. Lees remarked, yet remained to be noticed, viz., a chronic ulcer of the stomach, in the usual situation, at the lesser curvature; it was a deep, excavated ulcer, and in the immediate neighbourhood were one or two superficial ulcers in an early stage.—*February 28, 1846.*

11. *Ulceration of the Stomach and Duodenum after a recent Scald.*—Dr. Hutton detailed the following case, and exhibited the recent specimens. A child, four years of age, was admitted into the Richmond Hospital, on the 25th November, 1846, having, two days previously, been scalded by boiling water over the face, neck, chest, and arms. When admitted, she had rigors and a rapid, feeble pulse; there was also a degree of stupor present. These symptoms soon passed off, under appropriate treatment; on the 27th, a mild aperient having been given, the alvine discharges were found to resemble tar in colour and consistence: there was subsequently a slight diarrhœa, which was easily controlled. She now appeared to improve, was regaining her appetite and spirits, and the blistered portions of integument became covered with new cuticle; but, in some places, the skin was ulcerated, and the ulcers did not present a healthy aspect. On the 6th of December, however, she began to vomit everything she took, and passed blood from the bowels. This discharge continued to recur from time to time during the following day, and she died upon the 8th, fifteen days after the occurrence of the accident.

Post Mortem Examination.—In making the dissection, particular attention was directed to the duodenum, this portion of the intestinal tube having been found by Mr. Curling to be frequently the seat of ulceration, in fatal cases of burns and scalds. The stomach and duodenum having been laid open, several small ulcers were

found in the upper portion of the latter; one was situated at the entrance of the biliary duct; the surrounding mucous membrane was very vascular; the remainder of the duodenum was free from any morbid appearance, as was also the rest of the intestinal canal. At the lesser curvature of the stomach, near the œsophageal opening, there was a very large ulcer, similar in its characters to those of the duodenum, viz., having deep, rounded edges and a flat surface. The stomach, near its lesser curvature, was adherent to the diaphragm. Dr. Hutton looked carefully for the source of the hæmorrhage that occurred in this case, but was unable to find any trace of ruptured vessels; neither the stomach nor intestines contained any blood; and, though the ulcers of the stomach lay close to the coronary artery, there was no appearance of its having been opened.—*December 12, 1846.*

12. *Congenital inguinal Hernia, strangulated and sphacelated; the Testicle and strangulated Intestine occupying the inguinal Canal.*—Dr. Mac Donnell presented a preparation of a strangulated and sphacelated congenital hernia. The strangulation had occurred on a Saturday, and the patient, a man aged about 25, was admitted into the Richmond Hospital on the Tuesday following. There was by this time no possibility of reducing the hernia, but by the operation, which, on consultation, it was decided should be performed immediately. The hernial tumour was on the left side, along the line of Poupart's ligament, and measuring about four inches by two and a half; it was of a dingy reddish-brown colour, and at one point was slightly œdematous. The integuments were not moveable over the tumour, a condition which contra-indicates the employment of the taxis. Before describing the operation, Dr. Mac Donnell observed, that the account given by authors of the symptoms occurring in cases of this kind were not of much practical value; for instance, we are told that a sudden decrease of the distress immediately ensues on the occurrence of sphacelus, and that it is accompanied by sinking, the "facies hippocratica," &c.; but in three cases of sphacelated hernia seen by Dr. Mac Donnell none of these occurred, and in all of them there was immobility of the integuments over the tumour, and an evident thickening and induration of all the parts covering the protruded intestine. As a result of this state of the parts in the present case, when the first incision was made, no retraction of the divided integuments succeeded, only a linear cut resulting; and as the incision was carried deeper according as the operation proceeded, it was observed that all the tissues were confounded with each other, and that they became darker and darker in colour as the hernial sac was approached. The hernia, which was one by oblique descent, was lying in the inguinal canal, but the tendon of the external oblique muscle was not discernible, and even the muscular fibres were so dark-coloured, and so confounded with the contiguous parts, that they could not be distinguished. Within the hernial sac was the intestine, very much distended, and below and to the outer side of it was the testis, perfectly healthy in appearance.

An exceedingly fœtid discharge had proceeded from the sac when the opening into it was made, an indication of the sphacelated condition of the intestine, which, when exposed to view, was observed to be mottled, yellow, and greenish, but its serous surface still smooth. The stricture which was at the internal ring, was very tight, so much so that it was difficult to insinuate the edge of the nail between it and the intestine ; a director could not be introduced : it was, however, very cautiously divided, and the parts left *in situ*. In the evening of the same day the intestine was opened ; nothing was evacuated but the contents of the protruded portion itself, showing that as yet the communication was not restored with the rest of the canal. During two subsequent days the patient appeared to be getting worse. Dr. Mac Donnell made more than one attempt to discover which was the upper extremity of the strangulated intestine, by introducing a gum elastic catheter into it, but these attempts were unsuccessful. Dr. Mac Donnell approves, in such cases, of meddling as little as possible with the parts, leaving it to nature to establish, by the sloughing of the parts at the stricture, the communication between the intestine and the wound, rather than incur the risk of what actually happened in this case, viz., the effusion of fæculent matter into the cavity of the peritonæum. After two days more he again divided the stricture, and he thinks this second division was made exactly at the same point as the first ; the upper extremity of the hernia was found to be slightly torn from its adhesion at the ring, and some fæculent matter had escaped into the abdomen. The patient sank rapidly. When the body was examined, the intestines from the pylorus down to the stricture, were observed to be enormously distended ; below the stricture, with the exception of the portion in the sac, they were small and free from inflammation.—*January 16, 1847.*

13. *Artificial Anus.*—Dr. Mayne said that the case which he was about to lay before the Society had occurred under the care of his colleague, Dr. Shannon, Surgeon of the South Union Hospital, to whom he was indebted for the opportunity of communicating it. The subject, a man aged 70, was admitted into the hospital of the institution three months ago, he stated that his health had been good up to that time, and he denied having ever suffered from any symptoms of hernia. A short time before his admission he was seized with a severe rigor, which was speedily followed by an inflammatory swelling of the abdominal parietes of the left side, occupying the inguinal and lumbar regions, from Poupart's ligament up to the margin of the thorax ; it resembled phlegmonoid erysipelas, communicating to the finger an œdematous feel, being of a dark red colour, and accompanied by severe constitutional symptoms ; there was fever of a low type, with a tendency to delirium, and muttering during sleep ; the tongue was parched ; the contents of the bowels were passed involuntarily, but the stomach was not irritable.

Dr. Shannon made free incisions through the integuments and

fascia, and thus gave exit to a quantity of thin pus, mixed with shreds of sloughy cellular membrane. The patient was at the same time put on large doses of ammonia and camphor, with a liberal allowance of wine. In a few days he had rallied considerably. The muttering delirium had ceased, he recovered the control over the sphincter, his tongue became moist and clean, and the appearance of the incisions was favourable. On the ninth day after the incisions had been made, and the fourteenth day of his illness, stercoraceous matter was observed in the discharge issuing from one of the wounds in the groin. The constitution did not seem to suffer in consequence of this new complication; fecal matter in nearly the usual quantity passed daily *per anum*, the appetite continued good, and the man's strength improved gradually. For several weeks stercoraceous matter continued to appear in the discharge; all the incisions (except one) at length healed perfectly, but from this the fecal matter issued, and to assist the cure pressure was cautiously applied. This treatment was successful; in eleven weeks the wounds had all closed, the only interruption experienced having been from occasional attacks of colic, which were relieved by laxatives, and a temporary removal of the pressure. The man subsequently contracted the prevailing dysentery, and sunk under it.

On examining the body, the usual anatomical characters of dysentery were observed. The parts concerned in the artificial anus were removed carefully, and were now before the Society. The artificial anus was perfectly healed; a depressed cicatrix alone marked its site on the abdominal integument. On viewing the preparation from behind, a portion of the small intestine was seen to have afforded the stercoraceous discharges, being firmly adherent to the abdominal wall. There had been an exceedingly small inguinal hernia, a part of the anterior wall only of the gut being engaged in the sac, so that there was very little obstruction in the canal of the intestine. There was no difference in the calibre of the intestine, measured above and below the artificial anus, nor was there here any angular change in its direction.

In this case, Dr. Mayne remarked, the total absence of constipation or irritability of stomach during the early periods of the case, and the late appearance of stercoraceous matter in the discharges, precluded the supposition that it was originally one of strangulated hernia ending in gangrene. The case afforded a good example of disease propagated from the parietes of the abdomen to the abdominal viscera, an exceedingly rare occurrence; and it also strikingly illustrates the difficulty of an accurate diagnosis under such circumstances. In fine, the success which followed the application of pressure for the cure of the artificial anus was explained by the trifling loss of substance which the intestine had suffered, and the small extent of angular displacement present.—*January 3, 1847.*

14. *Malignant Disease of the Duodenum; Jaundice.*—Mr. Hamilton said the specimen which he had then to present tended to illustrate the history and diagnosis of tumours within the abdomen. A woman,

aged 58, was admitted three weeks ago into the Richmond Hospital. She stated that she had enjoyed good health until five weeks previously, when she began to suffer from sickness of stomach and headach, and that soon afterwards she discovered a tumour in her abdomen, about the size of the closed hand. At the time of her admission she was emaciated, and had the aspect of one suffering from chronic disease, with the sallow, anxious countenance which is so usual in diseases of the malignant class. The tumour which she complained of was in the umbilical region, the umbilicus being over its centre. The mass, which was not prominent, was firm, nodulated, and exquisitely sensible. This extreme sensibility was reduced by the application of leeches, and by blistering; and when, by these means, the tumour admitted of being more minutely examined, it was found to extend deep into the abdomen, and to be well defined on the left side, but not on the right, where it gradually was lost in the direction of the ascending colon, and presented characters not unlike those arising from an accumulation of fæces. It was fully twice as large as an orange, and there was a strong pulsation in it, which, however, was not diastolic, and evidently arose from the impulse of the abdominal aorta; below it there was also a bruit de soufflet, but perceptible only when the stethoscope was pressed strongly on the tumour. The pain was most severe when the patient lay on the left side. The diagnosis was very uncertain; that a malignant disease existed was sufficiently obvious, but its precise seat could not be determined. Treatment was hopeless in a case like this, where the disease was so evidently of a malignant nature. The yellowness of the skin went on increasing until the patient became completely jaundiced, yet the dejections continued to be dark-coloured, though not melænic. Obstinate vomiting set in, which resisted all the means resorted to for checking it; nothing appeared to give any relief except black drop. At last delirium supervened, and in that state the patient died.

The examination of the body after death showed that the disease was chiefly in the duodenum, occupying the first part of its course, next the pylorus. In this situation the parietes of the intestines were thickened and indurated, and the tissues confounded in a homogeneous malignant structure. A little below this the same disease was observed in an earlier stage of its progress. The pancreas was but little affected; it was harder than natural, and its head lost in the diseased structure of the duodenum. The jaundice had been caused by obstruction of the ductus communis; its orifice was closed, and the duct itself completely flattened by the pressure of the diseased mass. The gall-bladder was enormously distended with dark green bile. Between the gall-bladder and the colon adhesions, evidently of recent formation, were found; and at a point corresponding to these adhesions the mucous membrane of the gall-bladder was slightly ulcerated. The liver was gorged with bile, of a very dark colour.—*January 16, 1847.*

OSSEOUS SYSTEM.

Case of Luxation of the Bones of the Spinal Column, occurring between the fifth and sixth cervical Vertebrae. In this Case also a Fracture of the Body of the sixth dorsal Vertebra, with much Displacement of the Bones, existed, and Laceration of the Spinal Marrow, causing sudden and complete Paralysis of the lower Extremities. The upper Extremities, at first slightly affected, afterwards became also paralysed, acute Ramolissement of the Medulla Spinalis having supervened on the Injury in the cervical Region. Death on the twelfth Day after the Accident. Post Mortem Phenomena.—Mr. Adams said he begged leave to lay before the Society a specimen of true and complete luxation of the articular processes of the fifth from the sixth cervical vertebra. When the whole of this case shall have been communicated, there will be found in its details other matters worthy of notice ; but as the possibility of a luxation of any of the vertebrae without fracture was questioned until lately, Mr. A. would wish to call the attention of the meeting this day particularly to the case of the true and complete luxation of the vertebrae, which the specimen he held in his hand sufficiently proves to have existed. Luxations of the vertebrae are so rare, that Sir A. Cooper and Boyer have not adduced any examples of luxation occurring in the region of the spine below the second vertebra. Mr. Lawrence and Baron Dupuytren have each adduced one case, showing that complete dislocation, both of the articular processes and of the bodies of the vertebrae, without fracture, may occur in the cervical region of the spine.

Mr. Samuel Cooper refers to three specimens of this accident, and Dr. Tchupke, of Vienna, to two. The specimen Mr. Adams then held in his hand was not, therefore, required by science to establish the fact of the possibility of a luxation occurring in the cervical region of the spine ; but as the patient lived for twelve days after having received the injuries of the vertebrae, and as the symptoms had been carefully observed, and noted also in the Hospital Case Book now before the Society, Mr. A. thought this fact might be considered well worth recording, particularly as the *post mortem* phenomena were accurately ascertained.

It will be seen that, besides the luxation of the cervical vertebrae, which induced ramolissement of the medulla spinalis in the important portion of it opposite to the luxated bones, there was also a transverse fracture of the body of the sixth dorsal vertebra, which was, at first, by much the severer lesion of the two. In the situation of the fracture, the bones had been so much displaced, that a *complete interruption and separation* of the medullary fibres had occurred. Although, as it has been just stated, this last was the severer lesion at the moment of the accident, still, to the *ultimate* consequences of the luxation must be referred the softening of the cervical portion of the spinal marrow, which caused the death of the patient.

Case.—Mary Anne Earle, aged 28, was admitted into the Rich-

mond Hospital on the 28th of August, 1838. She fell, or was thrown into an area, a depth of ten feet. The back part of her head came first to the ground, and her body seemed to have been doubled or violently flexed, giving her (as she reported) the sensation that her neck was driven into her chest. Having been lifted up, she observed that her body, below her neck, was nearly devoid of all feeling, and that she could not move her limbs. She stated that she perceived a *grating or cringing* at the lower part of her neck, as if some bone were broken, and that occasionally a numb tingling feeling (particularly on any motion of her neck) passed through her limbs. From the time of the accident till her admission into hospital at 2 o'clock, P. M., on the following day, she had passed no water, and on introducing the catheter about three pints of urine were drawn off. On examining the neck a depression was observed behind, at the lower part of this region; and, *on introducing the finger back through the mouth*, a projection *was felt in the pharynx*; "this projection seemed neither abrupt nor sharp; but smooth, though bony." There was no difficulty in swallowing, but great pain along the cervical vertebræ. Her respiration was laborious, and performed entirely by the diaphragm and abdominal muscles. Her ribs were motionless; her pulse 90, small and compressible; her stomach very irritable, rejecting everything, so that she was afraid to drink, though very thirsty. In no position was her head easy for more than a few minutes. She frequently had it moved and supported on each side. Her thirst, and the irritability of her stomach, kept her from sleeping, although anodyne enemata were administered.

The following notes were taken on August 31st, four days after the accident:

She lay upon her back; her abdomen was much distended and tympanitic; her whole body below her neck devoid of feeling,—its temperature of a natural standard; her lower extremities quite paralysed; if raised, or left unsupported, falling down as if lifeless, and lying in whatever position they are placed. However, the upper extremities were not so completely powerless, as she could move the fore-arm a little, and support it for a moment or two; here also she felt an occasional numb tingling sensation. Her respiration was 22, and performed by the diaphragm; the pulse 80, regular. The use of the catheter was necessary, and the bowels remained unmoved, except by aperient enemata. She got no sleep, except a short doze; still teased by thirst: there was frequently a convulsive working of the mouth. Her intellect was perfect; her manner calm, collected, and resigned, throughout the whole of the case. She had a weak kind of vomiting, or rather gulping up of the contents of the stomach. On each successive day she became gradually worse. The dejections were involuntary; the vomiting ceased; her respiration rose to 32; her pulse was 90; the upper extremities now became utterly powerless, as well as the lower limbs, which had been so from the first. She lived for one week longer, surviving till the twelfth day from the occurrence of the accident.

During the latter days the following phenomena were observed : The first and most remarkable were, a gradual increase of the pulse and respiration, which latter grew daily more and more difficult ; but there were paroxysms of dyspnœa subject to change,—intervals of comparative ease occurring, which were followed by others of increased suffering, when the breathing became very irregular and distressing : every change of position caused a hurry in respiration. On each day there was an increase of what might be called her ordinary respiration, when no paroxysm existed, and this amounted on the eleventh day to 40 or 50. The pulse was about 90, and soft. Her respiration was also impeded by the great tympanitic distension of the abdomen which existed : this was occasionally relieved by drawing off the flatus by a flexible gum-elastic tube. The introduction of the catheter to relieve the bladder was daily necessary ; and on two occasions, while using it, the operator observed that there was a great quantity of mucus in the vagina. Towards the close, the urine became remarkably morbid, and was loaded with fetid mucus. The bladder became the source of great irritation and uneasiness to her, as her attention became directed towards it. Bed sores also formed, and a large patch of the integuments of the lower part of the back sloughed. Immediately preceding death, which took place at half-past 11 o'clock, A. M., September 9, she had a convulsion, in which her left arm was moved up and down : her visage was much distorted by involuntary workings ; she frothed at the mouth, which state lasted nearly an hour. Her manner throughout her illness was generally short and abrupt. She never entertained any hope of recovery since the accident.

Post Mortem Examination. Thorax.—The lungs were found much congested, and there was some effusion of serum into the cavity of the pleura.

The uterus contained a male fœtus about the third or fourth month. The bladder, which contained a small quantity of whitish fluid, having a heavy odour, was of very small dimensions. The rugæ of the lining membrane were red, mottled, and greatly inflamed, while the intervals between the rugæ were pale. At no point did any ulceration of the mucous membrane exist.

Spinal Column.—A luxation existed between the fifth and sixth cervical vertebræ, and an oblique fracture traversed the sixth dorsal vertebra from before backwards ; the upper portions projected forwards, but were kept to a certain degree *in situ* by the anterior and posterior common ligaments which, in both the luxated and fractured portions of the spinal column, were unbroken. In the cervical region a true dislocation had occurred without any fracture. The inferior oblique processes of the fifth cervical vertebra had advanced, while the superior oblique processes of the sixth cervical vertebra had gone backwards ; so that their naked cartilaginous surfaces were exposed when the soft parts were removed from the cervical region posteriorly ; the body of the fifth cervical vertebra was one quarter of an inch in advance of the body of the sixth cervical vertebra : the

intervertebral substance had disappeared. The only ligaments ruptured were the capsular ligaments of the oblique processes and the ligamenta subflava. The anterior and posterior common ligaments of the spine remained unbroken, so that although a very decided luxation existed so far as the articulating processes and bodies of the vertebræ, the absolute displacement of the bones as to each other only consisted in a slight advance of the fifth vertebra on the sixth. The longi colli muscles in front were perfect, and these, as well as the posterior muscles, prevented the bones from further displacement than that just mentioned. The displacement of the vertebræ, where the fracture existed inferiorly through the body of the fifth dorsal vertebra, was much greater than the displacement of the bones in the cervical region, where the luxation existed. The anterior and posterior ligaments were unbroken : here, also, all the articular processes remained *in situ*.

Medulla Spinalis.—On opening the bony canal, some extravasated blood of a black colour was found at the seat superiorly of the luxation and inferiorly of the fracture. The spinal marrow and its theca were then removed, and the latter opened. The pia mater corresponding to the lower injury (the fracture) was found to be of a yellowish-brown colour ; and though it maintained its continuity at this place, there was a complete and perfect interruption of the substance of the medulla spinalis. Corresponding to the seat of the cervical lesion in the bones, that is, the luxation, the medulla spinalis externally exhibited but little alteration in its appearance from that which is normal, except that it had a slight tinge of yellow colour ; but when a longitudinal section of the medulla was made, it was found that ramollissement of this portion of the nervous system had occurred. The medulla was remarkably soft, almost diffuent, for the extent of three or four inches, presenting a mottled appearance, from the different shades of colour—yellow, red, and brown—which were observable on it.

On a former occasion Mr. Adams had shown to the Society the medulla spinalis when exhibiting other specimens of injuries of this portion of the nervous system, but at that time was not aware of the true lesion the bones had suffered. It was Mr. Robert W. Smith who discovered that in the cervical region a true luxation had occurred.—*March 29, 1845. Museum, Richmond Hospital.*

Compound Fracture of the Tibia extending into the Knee-Joint.—Dr. Hutton exhibited a specimen of injury of the tibia, implicating the knee-joint, taken from the body of a man, aged 50, who, while in a state of intoxication, had fallen off a cart, one of the wheels of which passed over his lower extremities. When he was brought into the Richmond Hospital he was found to have sustained a simple fracture of the lower third of the left femur, and a compound comminuted fracture of the upper extremity of the right tibia. There was a lacerated wound on the inner side of the leg, about three inches below the knee. A fluid resembling synovia flowed from it, and upon the day subsequent to the admission of the pa-

tient into the hospital the presence of air was detected in the knee-joint. The man appearing to have suffered very little from the shock of the accident, there being scarcely any constitutional disturbance, the remoteness of the wound from the knee-joint, and the condition of the opposite femur, were the circumstances which, at a consultation held upon the case, induced him to attempt to preserve the limb.

The swelling of the joint subsided at the end of three days ; the air was absorbed, and for a week after the occurrence of the accident, there was scarcely any fever present. Then, however, an erysipelatous blush appeared about the wound, and several abscesses formed amongst the muscles of the thigh ; hectic fever set in, and the man died of diarrhœa one month after his admission into the hospital.

Autopsy.—The tibia was broken obliquely about three inches below its head, and from this fracture (which was comminuted) one fissure extended upward into the knee-joint, separating the outward condyle, and another downwards, vertically, to within three inches of the ankle-joint. The fibula was uninjured. The synovial membrane of the knee-joint did not present any evidence of inflammation. The cartilage of the patella was slightly softened.

“It was very doubtful,” Dr. Hutton remarked, “whether in this case early amputation would have saved the life of the patient. The rule, in cases of compound fracture extending into the knee-joint, is certainly to amputate the limb at once. But it is founded on the anticipation of a probably fatal inflammation of the articulation setting in. In this instance, however, there was no inflammation of the joint.”—*December 13, 1845.*

Caries of the Cervical Vertebrae.—Dr. Mayne exhibited a specimen of scrofulous caries of the superior cervical vertebrae. The patient who was the subject of it was a boy, aged 11, who first came under his observation in February last, labouring under enlargement and ulceration of the lymphatic glands, in the parotid region, and along the base of the jaw.

In the month of April he began to complain of stiffness in the neck ; he could not incline his head backwards without suffering considerable pain, nor could he bend it forwards without supporting his chin upon his hands. The slightest pressure applied to the vertex caused intolerable uneasiness, nor could he endure pressure upon the spinous processes of the superior cervical vertebrae.

Shortly after the appearance of these symptoms, he was attacked with severe pain in the head, together with slight numbness of the right upper extremity ; and in the month of May his breathing during sleep became stertorous. Upon examining the throat, a tumour was discovered at the back of the pharynx ; it was nearly as large as a hen's egg, had pushed forward the velum pendulum palati, and to the finger it felt tense and elastic. The boy experienced, however, no difficulty in swallowing, nor had he, except during sleep, any stertor or dyspnœa. The tumour was punctured with a

trocar, and exit given to a large quantity of matter, which, flowing down to the glottis, produced violent fits of coughing. By the evacuation of the contents of the tumour, the stertorous breathing was relieved completely; that night the patient's rest was unbroken.

After the lapse of ten days, the sac of the abscess filled again, and the stertor returned. A second tumour now appeared at the back of the neck, over the transverse process of the cervical vertebræ. The pharyngeal tumour was again punctured, and the evacuation of its contents was followed by the subsidence of the external tumour. After an interval of about a fortnight, both tumours re-filled. An incision was now made into the external abscess, and as the matter flowed, the pharyngeal tumour became collapsed. This incision, degenerating into a fistula, served as a counter-opening, gave free exit to the matter from the internal abscess, and prevented the recurrence of the stertorous respiration.

When some further time had elapsed, the patient was attacked with an epileptic fit, which was succeeded by paralysis of the upper and lower extremities, retention of urine, and involuntary discharge of fæces. The sensibility of the limbs was not impaired, respiration was tranquil, and intelligence was perfect. The patient survived this attack for about a fortnight. Symptoms of disease of the bladder set in; bed sores formed wherever the soft parts were exposed to pressure; and he died suddenly while making an effort to move his head. It is worthy of notice that for some days before his death, he had recovered, in a slight degree, the command over the motions of the left lower extremity, and was able to pass urine without the aid of the catheter.

Autopsy.—A probe introduced into the external fistula was found to pass by a rather circuitous route into the pharyngeal abscess, and from the latter, a sinus conducted into the vertebral canal. The right condyle of the occipital bone, together with the corresponding portion of the atlas, was carious, and completely denuded of cartilage. The transverse and check ligaments were destroyed, as was likewise the apparatus ligamentosus colli. The brain was healthy, but the arachnoid membrane at its base exhibited some traces of inflammation, especially at the point of its reflection from the medulla oblongata, and the pia mater investing the almond lobules was highly vascular.

The immediate cause of death was the compression of the spinal cord by the odontoid process, consequent upon the displacement forwards of the atlas.—*December 20, 1845.*

Injury of the Elbow-Joint.—Mr. Robert W. Smith exhibited a preparation and cast of an injury of the elbow of a very unusual and rare description; it was taken from the body of a man aged 46, who died of pulmonary disease, and who had met with the injury of the elbow several years before his decease. The fore-arm formed a right angle with the arm; it could not be flexed any further, nor could it be extended; the hand was fixed in a state of pronation,

the power of supination was almost completely lost; no motion whatever could be imparted to the ulna; it was, in fact, obvious that it was ankylosed to the humerus; the head of the radius formed a striking prominence below and behind the natural situation of the capitulum of the humerus; the olecranon process, likewise, was placed behind and below the plane of the condyle of the humerus, but was by no means as prominent as in the ordinary case of luxation of both bones of the fore-arm backwards.

Upon the inner side of the joint three distinct osseous processes could be felt, placed upon the same vertical plane; two of them were constituted by the inner margins of the olecranon and coronoid processes; the third (which was superior) corresponded to the inner condyle of the humerus; at the outer side of the joint was also seen a remarkable projection, placed above the dislocated head of the radius, and reaching upwards about three inches along the outer margin of the arm. Where it ceased, a great irregularity could be felt in the shaft of the humerus, as if it had been the seat of an oblique fracture. From these characters it was conjectured that the injury had originally been a combination of fracture of the humerus, with luxation of the fore-arm at the elbow.

Upon examination *post mortem*, the following condition of parts was found. A fracture, commencing about four inches above the outer condyle of the humerus, traversed the bone obliquely downwards and inwards, terminating about an inch above the inner condyle; this fracture had united with considerable deformity and overlapping, the lower end of the upper fragment projecting forwards and inwards. The ulna was ankylosed at a right angle with the humerus, and somewhat displaced inwards; so that a line prolonged vertically downwards from the centre of the olecranon fossa of the humerus would pass completely external to the olecranon, the inner margin of which was exactly in the same vertical plane as the point of the inner condyle. The head of the radius lay in the situation which it occupies in what is termed luxation backwards. It lay below and towards the posterior part of the outer condyle, the inferior surface of which, enlarged and flattened, presented a very shallow socket for the displaced head of the radius. The capitulum of the humerus had altogether disappeared; a strong capsule surrounded the new radio-humeral articulation, and from its inner surface was detached a bundle of ligamentous fibres, resembling the round ligament of the hip-joint. This new ligament was fixed in the depression which the head of the radius presents, and which was here much deeper than natural. The specimen then was an example of oblique fracture of the lower end of the humerus, with displacement of both bones of the fore-arm, inwards and slightly backwards; but, Mr. Smith remarked, it was involved in some obscurity, in consequence of the ankylosis of the ulna to the humerus; for ankylosis was not a usual result of accidental luxations that have been left unreduced. In such cases the efforts of nature are rather directed towards the formation of a new articulation; so that, in the

absence of any of the commemorative circumstances of this case, the question naturally suggested itself, were the lesions of the humerus and of the elbow-joint, that had been described, the results of the same accident, or should the abnormal state of the elbow rather be considered as the result of chronic disease of the joint, occurring totally independent of, and at a period different from that at which the fracture of the humerus took place? Mr. Smith remarked that it would now be extremely difficult to arrive at a correct conclusion upon the question, but he was inclined to maintain the opinion, that the two lesions were coeval. With respect to the ankylosis between the ulna and the humerus, it may have been the result of a wound of the synovial sac of the articulation (by the pointed extremity of the upper fragment), whereby were induced synovitis and ulceration of the cartilages: this, however, was merely a conjecture. Such an occurrence is sometimes met with when the synovial sac of the knee-joint has been penetrated, in cases of fracture either of the femur or of the tibia. Mr. Smith, in concluding, alluded to a case described at page 465 of the edition of Sir A. Cooper's work edited by Mr. Bransby Cooper, of an injury of the elbow-joint, analogous to that which he had just described.—*January 3, 1846.*

Fracture of the Neck of the Femur.—Mr. Robert W. Smith exhibited a specimen of fracture of the neck of the femur, external to the capsule, and gave the following history of the case: Eliza M'Cabe, aged 80, was admitted into the Richmond Hospital December 13, 1845; she had just been violently thrown down in the street. The limb was shortened one inch and a quarter, and the foot was everted. During the night of the 17th she got out of bed, and made her way across the ward to the fire, beside which she remained, sitting upon the floor, until morning. Upon several subsequent occasions she left her bed, and hobbled about the ward, raving occasionally, and unconscious of pain. Opium failed to tranquillize her; in fact she manifested most of the symptoms of traumatic delirium. When the limb was examined after several of these attempts to walk, it was found that the shortening of the limb had reached two inches, and that there was a decided tendency to inversion of the foot. Two exceedingly sharp spiculæ of bone, belonging to the lower fragment, threatened to perforate the integuments close to Poupert's ligament, and a bony tumour could be felt towards the dorsum of the ilium. Upon the 8th of January, 1846, she was attacked with diarrhœa, and died upon the 30th, about six weeks after the occurrence of the accident.

Upon examination of the joint after death, the neck of the femur was found fractured external to the capsule; it had been driven into the cancellated tissue of the lower fragment, breaking off the entire of the trochanter major; the neck of the bone and the trochanter formed a right angle with the shaft; the former had suffered a very singular rotation, in consequence of which its anterior surface was directed upwards, and its posterior surface downwards; its conca-

vity looked forwards, and its upper surface backwards. The head of the bone was directed backwards, and the broken extremity of the cervix forwards; the trochanter was displaced along with the neck of the bone; the anterior surface of the lower fragment presented two sharp spiculæ, the points of which were only covered by skin; the anterior surface of the femur was turned inwards, and the lower fragment had been driven upwards in front of the superior.—*January 31, 1846.*

Fracture of the Spine in the Lumbar Region.—Mr. Hamilton exhibited a specimen of fracture of the second lumbar vertebra, taken from the body of a man, aged 25, who had been admitted into the Richmond Hospital early in December, 1845. The injury occurred upon the morning of his admission, and was caused by his having been crushed between an iron boiler and a beam of timber. He was assisting to roll the boiler up an inclined plane, when, a rope which was attached to it having broke, it rolled back upon him. He was brought to the hospital in a state of extreme prostration; his pulse was indistinct, and his lower extremities cold, and paralysed. The second lumbar vertebra formed an angular projection, and the spine immediately below the seat of the injury was displaced towards the right side. He had retention of urine from the moment of the occurrence of the accident until the time of his death. The urine remained acid for the first week; it then, after some pain in the bladder and a certain amount of irritability of the organ, became alkaline, and deposited a tenacious mucus, together with the ammoniaco-magnesian phosphates. On several occasions subsequently, however, it became for a short time clear and acid. Stillicidium was present. For a few days after the occurrence of the accident, sensation remained in the front of each thigh, but before long it was lost upon the left side. There was a diminution of animal heat in the paralysed limbs: when he was admitted, the temperature was 97° in the axilla, and 96° in the popliteal space; subsequently 96° in the former, and only 91° in the latter situation; and a short time before the patient's death, during an attack of erysipelas, the temperature was 102° in the axilla, and only $89\frac{1}{2}^{\circ}$ in the ham. The pulse was about 74 throughout the whole progress of the case, except during the prostration which existed immediately after the receipt of the injury, when it was only 54, and shortly before his death, when, during an attack of erysipelas, it rose to 120. During his illness he had an attack of diarrhœa, which depended upon the presence of scybalæ in the colon. These being removed by means of injections, the diarrhœa ceased, but during its continuance the parts about the anus become excoriated.

About five weeks after the occurrence of the accident he experienced stinging and creeping sensations in the lower limbs. An issue was now established in the vicinity of the fracture, after which the sense of feeling gradually extended along the front of the right thigh, as far as the knee.

On the 2nd of February, after the occurrence of rigor and vomit-

ing, erysipelas appeared upon the back, and soon spread over the entire of the dorsal, gluteal, and femoral regions; it reached the legs and extended symmetrically over the chest, abdomen, and arms down to the wrists. He now began to sink rapidly; his pulse became feeble, the urine deeper-coloured and mixed with blood; then delirium occurred, and he died on the 13th of February, about two months after the receipt of the injury. During the entire time he lay upon a water-bed. There was no sloughing until the supervention of the erysipelas, when the integuments perished over the right trochanter, on which he constantly lay.

Autopsy.—The second lumbar vertebra was found to have been fractured through its superior portion, close to the intervertebral substance. The fracture extended obliquely downwards through the lamina of the vertebral arch. The inferior fragment was slightly displaced towards the right side, where a small portion of the broken lamina had penetrated into the substance of the medulla spinalis, immediately above the cauda equina. There was an effusion of blood in the situation of the fracture, and the lacerated portion of the spinal marrow was reduced to a semifluid condition, with the exception of a small portion at the left side, which retained its normal consistence.

The bladder was thickened to a remarkable degree, and its mucous membrane, which was of a deep red colour, was here and there covered with depositions of a yellowish grey lymph. The kidneys contained some purulent matter. Mr. Hamilton was inclined to attribute the thickened state of the bladder to the high inflammation which had existed; it could not be attributed to muscular action, the organ having been completely paralysed for two months. The pathological appearances in this case led Mr. Hamilton to believe that the hypertrophy so constantly found in the inflamed bladder in cases of stricture and enlarged prostate, depended more on the extension of the inflammation from the mucous to the cellular coats than on true muscular enlargement.—*February 14, 1846.*

RESPIRATORY SYSTEM.

Phthisis in the Infant.—Dr. Mayne said that the specimens which he had to present to the Society were taken from a child of a year old, who had died of extensive tubercular disease. He considered them important, as being explanatory of the difficulty so frequently experienced in diagnosing pulmonary phthisis at that early period of life,—a difficulty which depends upon the very advanced stage at which the disease often arrives, before the physical signs are sufficient to justify the physician in giving a positive opinion.

The child was brought to him early in June, labouring under a cutaneous eruption, which soon yielded to mild alteratives. The child, however, did not seem to recover its health; it looked delicate; it was soon attacked with cough and diarrhoea, and the abdomen became swollen and tympanitic. These symptoms were at-

tended with insatiable thirst and rapid emaciation; the respiration and circulation also became permanently accelerated, and towards the close the stomach rejected almost every description of nourishment.

The constant cough and the incessant diarrhœa, with progressive emaciation, left but little room to doubt that the child's disease was phthisis; yet, although this opinion was formed as early as the beginning of August, no satisfactory physical signs were detected in the thorax until about the 25th of November. At that period a considerable portion of the back of the left lung was found dull, and the respiration over the same extent of the surface became bronchial. After some further time, the same stethoscopic signs appeared at the corresponding part of the right lung, but at no period of the complaint were any stethoscopic indications of tubercular softening ascertained to exist.

The child died towards the end of December, and when the body was examined, tubercles were found in both lungs and in the spleen, liver, kidneys, and mesentric glands. They were all in the crude state, and were nearly equally developed in all parts of both lungs.

The difficulties which attended the diagnosis in this case, Dr. Mayne remarked, were thus explained:—both lungs, from their apices to their bases, being equally the seat of tubercular deposit, all the advantages of *comparative* percussion and auscultation were lost, and as none of the tubercles had softened, the stethoscopic phenomena which depend upon this change were also absent.

The naturally loud respiratory murmur of the infant's lung presents another difficulty; for, in consequence of the great clearness of the *natural* murmur, solid deposits accumulate in the pulmonary tissue, without producing the physical signs of solidification, to an extent which would be impossible in after-life.—*January 10, 1846.*

Perforation of the Pulmonary Pleura.—Dr. M'Dowel exhibited the morbid parts in this case. The patient, a young man of about twenty years of age, came under medical observation in October, 1845, labouring under phthisis, which had supervened on secondary syphilis. There was evidence of the existence of softened tubercles in the upper part of the left lung, but the most careful examination failed to detect a cavity. He left the hospital in a few weeks, and early in the month of November was admitted into the hospital of the North Union Workhouse, under the care of Dr. Kirkpatrick.

The disease in this short interval had made rapid progress, for, when examined now, there were found to exist all the signs of a phthisical cavity beneath the left clavicle. For a month nothing material occurred, but on the 19th of December the patient complained of a stitch in his left side. The pain, it was important to note, had not come on suddenly, but, from being slight at first, had been for several days gradually becoming more intense; there was also short, dry cough, dyspnœa, and general febrile disturbance. These symptoms were soon followed by the signs of effusion, com-

bined with those of perforation of the lung. On examining the chest, the upper portion of the left side, in whatever position the patient assumed, sounded preternaturally clear on percussion, and the most depending portion completely dull. No respiratory murmur was audible over any portion of the left side; but over that part which, when struck, yielded a clear sound, metallic tinkling, and a splashing sound on succussion, were distinctly to be heard. Some of the signs of displacement were also present; the heart was to be felt pulsating to the right of the sternum, and the left hypochondrium was preternaturally full. In addition there were present great dyspnœa, profuse diarrhœa, decubitus on the left side, and cough: expectoration, which had been previously very abundant, had ceased. Medical treatment alleviated some of the most distressing symptoms, but on December 27 the dyspnœa became most urgent, and the pain in the side agonizing. On the 29th he was yet worse, unable to lie down, in extreme suffering, wasted by hectic, and so weak, that his discharges were passed involuntary; under these circumstances, and as a palliative, paracentesis was performed. The centre of the seventh intercostal space, on the left side, was selected; the integuments were divided with a lancet, and a small-sized trocar was then passed into the pleura. A gush of air first escaped through the canula, then there flowed away nearly two quarts of thin, inodorous, sero-purulent fluid, of a yellowish colour. It was observed that, during inspiration, the air rushed in through the canula into the pleural sac, and that during expiration the fluid flowed through the canula, from which it was obvious that the lung had no power of expansion, but still lay compressed against the spine, although the cause of its compression was removed.

The relief afforded by this simple operation was extremely gratifying; the patient bore it well, and one hour afterwards was found lying down and sleeping quietly, which he had not done for several days previously. The system, however, was too much exhausted to rally; the diarrhœa continued unchecked; he sunk gradually, and died four days after the operation.

Dr. M'Dowel presented to the Society a cast illustrating the morbid appearances seen on opening the thorax; and said that he was indebted to his friend, Dr. Kirkpatrick, for the opportunity of exhibiting the specimen which accompanied it. The cast showed great enlargement of the left pleural sac, which after death was found to contain inodorous air, and but very little fluid; the diaphragm pressed down, the heart still lying to the right of the sternum; the lung lay compressed at the back of the thorax; the pleuræ covering it, and the parietes were thickly coated with reticular lymph; the cone of the pleura was obliterated by adhesion; and below the line of adhesion, on the front of the lung, three inches below its apex, was seen a round fistulous opening, large enough to admit the top of the little finger, leading directly into a tubercular cavity. The whole of the left lung was full of tubercular deposits: a few scattered tubercles were found in the right lung.

Dr. M'Dowel observed that this case presented several lesions:

1st. A tubercular cavity.

2nd. Ulceration opening into the sac of the pleura.

3rd. Pleuritis, the result of extravasation into the pleural cavity of air and tuberculous matter.

4th. The effusion of serum, and subsequently of pus, from the inflamed membrane, constituting pneumothorax, with empyema.

He observed that no *marked* symptom denoted the exact period of the occurrence of the perforation of the lung; neither the sudden pain, urgent dyspnœa, nor the sensation of air passing out of the lung into the chest, which patients have so often complained of. Here, on the contrary, the pain came on gradually, and neither pain nor dyspnœa were very great, until there was such an amount of pleuritic effusion as to account for both.

Again he observed it was remarkable that in this case there was no dilatation of the side, or obliteration of the intercostal spaces; and that although this had been observed by others, in cases where, as here, the opening was direct, not valvular, yet he rather thought that, in the case before the Society, there had not been time sufficient for the development of this rather late symptom of pleural effusion,—the internal organs, from their affording less resistance, yielding to the distensile force sooner than the parietes. With respect to the operation of paracentesis performed in this case, Dr. M'Dowel said that there was nothing unusual in such a line of practice; the great dyspnœa and suffering produced by the air and fluid contained in the pleura frequently rendering such a proceeding imperative, to avert impending suffocation.

Dr. M'Dowel thought that the operation is most likely to be required soon after the occurrence of the perforation of the lung; for if the patient survived the immediate violent effects of this accident, the disease may assume a chronic character, in which surgical interference would be most injurious; for cases are recorded where patients, with all the physical signs of pneumothorax, have been able to engage for a time in even the most laborious occupations.

From a careful examination of the present case, Dr. M'Dowel thought he was justified in saying that the "point of election" for performing paracentesis, as laid down by most authorities, was not in general the most eligible. Here the centre of the seventh intercostal space was chosen, and yet the trocar must have passed within half an inch of the collapsed lung. In operating on the right side so high as through the fifth intercostal interval, Laennec was so unfortunate, in one case, as to wound the liver, and Watson mentions a case where, in operating at the "point of election" on the left side, the spleen was wounded. We are to conclude, of course, that the injured organs in these cases were unusually high up; yet a knowledge of the possibility of such an occurrence, Dr. M'Dowel thought, should induce surgeons to select a higher point than is generally recommended for performing paracentesis of the chest. Dr. M'Dowel also thought that in this respect nature would be more

closely imitated; for he said it had been observed that, in cases of "empyema of necessity," the tumour almost always pointed *high up*, and in several cases had been known to open spontaneously above the clavicle.—*January 17, 1846.*

Pleuritis simulating Pericarditis.—Dr. O’Ferrall exhibited the recent parts in a case of pleuritis, which was interesting from having simulated, during life, pericarditis. The young man who was the subject of this disease was aged 19; he had been six weeks ill before his admission into St. Vincent’s Hospital, and had been for five weeks of that time in a fever hospital in Dublin. The symptoms he presented were, dyspnœa, anasarca, with considerable turgescence of the face, and blue congested lips; pulse 140, but regular. The case having been considered by more than one expert stethoscopist to be pericarditis with extensive effusion, Dr. O’Ferrall proceeded to examine it, with the expectation of finding that disease; and, certainly, nothing, at first view, could be more like it. The patient lay on his back, slightly inclining to the left side. On percussion, the cardiac dulness appeared to extend beyond its normal boundaries; the heart pulsated a little above its usual place; it could be felt close to the ribs, and its action heard distinctly there without murmur or friction sound.

The very superficial position of the heart, rendering its impulse so remarkably palpable, even while the patient was lying on his back, led him to doubt the existence of pericardial effusion. If the position had been different,—if the patient had been sitting up and leaning forward, the heart might gravitate through fluid into contact with the parietes,—but in that case a friction sound might be expected. The dorsal position, with evidence of contact, and absence of frottement, led Dr. O’Ferrall to the conclusion that no pericarditis existed.

The chest was then examined, the patient having assumed a sitting posture. The dulness was found to extend over the whole of the left side, posteriorly as well as anteriorly. Upon placing the hands on the sides, and desiring the patient to speak, no vibration could be felt on the diseased side, while it was plain on the other. The intercostal spaces were slightly protruded. The motions of inspiration and expiration were less marked on this side than on the right. The respiratory murmur was very faint and distant. It was evident that an extensive accumulation of liquid existed in the cavity of the left pleura. The absence of displacement of the heart might perhaps be owing to adhesions of older date.

The treatment consisted in cupping, blistering, and the exhibition of mercury, followed by tonics and diuretics. Under these means the anasarca gradually subsided, a friction sound became audible over the back of the chest, and the dyspnœa diminished. According as the respiratory murmur increased, it was observed to be mixed with a crepitating rattle. He remained in a state of partial recovery for four months; but it was observed that his pulse continued very frequent, varying between 130 and 140; his uri-

nary secretion, which had become copious, was now often defective in quantity; the dyspnœa began again to be troublesome. The mercury was exhibited a second time, but ineffectually. Anasarca again came on; the patient was attacked with hæmoptysis; and, finally, died somewhat suddenly.

At the autopsy, the left pleura was found to be obliterated by adhesions, those near the anterior margin of the lung being fibro-cartilaginous and evidently ancient. Nodules of pulmonary apoplexy were distributed through the left lung.

The pericardium, when cut open, was found to be smooth and polished on its internal surface, no trace of false membrane being present on any portion of its extent. The heart was enlarged, soft, and flabby, its cavities dilated and full of blood; the death had been by syncope: no valvular disease existed.

The morbid appearances were thus those of extensive pleuritis, pulmonary apoplexy, and enlarged, softened heart. But the question might arise, whether there might not have also existed a pericarditis, all traces of which disappeared under the treatment employed. But such a supposition was incompatible with the differences existing between the pericardium and pleura. If treatment had removed the effusion from the pericardium, why had it not prevented the organization of exuded fibrine in the pleura, and have also caused its absorption? If the extreme continued frequency of the pulse, without irregularity, and the violent action of the heart, be ascribed to a supposed pericarditis, let it be remembered that that lesion must have been cured, according to the hypothesis, four months before death, while the pulse remained as before.

Dr. O'Ferrall attributed the anomaly of the heart's not being displaced, to the existence of old adhesions at the anterior margin of the left lung; and he suggested that this might have been the cause of the cardiac distress which the patient suffered. Under ordinary circumstances, the heart, becoming displaced by the effusion, escapes, as it were, from the pressure; but when tied to the parietes, and compressed by a weight of liquid from behind, it becomes placed under conditions analogous to those of effusion into the pericardium, and is consequently liable to simulate that disease. The displacement which usually occurs may in this point of view be regarded as salutary, and the slight degree of inconvenience often endured by patients in this state seems to favour the conjecture.—*January 29, 1846.*

Encysted Tubercles in the Lungs.—Dr. Greene stated he had an opportunity of presenting to the Society a specimen of the encysted tubercle of Bayle; a morbid appearance so rare, that Laennec only saw four or five instances of it in a practice of twenty-four years, and Louis only mentions one case in his work on phthisis.

The female from whom the specimen was taken was admitted into the Whitworth Hospital on the 1st of January, labouring under cough, attended with a frothy and mucous expectoration, which was tenacious, and excreted with some difficulty. She had

inflammatory fever, with a quick and hard pulse, and urgent dyspnoea. On percussing the chest throughout, no amount of relative dulness could be detected; intense bronchial râles were everywhere audible, but no fine crepitus. On the supposition that the case was one of uncomplicated acute bronchitis, she was bled from the arm, and a solution of tartrate of antimony was administered. Under this treatment she improved so much that she requested to be discharged, and left the hospital on the 8th, to resume, as she stated, her family occupations. She returned, however, in a fortnight, but greatly altered in appearance. She stated she had caught a fresh cold, and that the cough had returned. The dyspnoea was now intense, and she lay on her back, incapable, apparently, of making any exertion; the cough was constant, and the expectoration was of the same character as before. On again percussing the chest no relative dulness was detected either behind or before; the bronchial râles were heard of the same intensity as when she first entered the hospital. The dyspnoea daily increased in severity, and she gradually sunk into a debilitated state, and died in a condition resembling asphyxia. The respiration throughout her illness was accelerated and abdominal; the expectoration, which was frequently examined, never contained any tubercular matter: the feebleness of her pulse, and the sunken and livid aspect of her countenance, prohibited the adoption of any active treatment. On examining the chest slight traces of interlobular pleurisy were found, such as weak adhesions between the lobes, and the deposition of a thin false membrane, more like the cellular tissue than the ordinary product of acute pleuritis, and such as is frequently found in old people attacked with influenza, and in subjects worn out by chronic disease of the chest. The bronchial mucous membrane was intensely injected, and the traces of vascularity increased towards the terminal branches of the tubes. The longitudinal fibres of these latter were greatly hypertrophied. This hypertrophy was, doubtless, due to the constant irritation of the bronchial tubes and attacks of intercurrent bronchitis, which are known to supervene whenever the bronchial tubes are in contact, for a length of time, with morbid products, such as tumours, aneurisms, &c. At the posterior portion of both lungs there was evidence of congestion and slight inflammation.

A number of rounded bodies, extremely hard and incompressible, were found in the lungs; some were small, others of considerable size, occupying both the upper and lower lobes. The morbid anatomy of these little bodies (several of which had been removed and sections made through them) was very peculiar; the cysts in which the morbid matter was contained were similar to cartilage, very hard and elastic. Two membranes were distinctly observed on examining the section, the outer cartilaginous or fibrous, and the inner mucous, which latter was smooth to the touch, but unequal on its surface, sometimes containing little depressions. These cysts, in fact, possessed the same structure as chronic phthisical cavities, but on a very minute scale.

It would appear that these bodies had existed in the lungs for a long time; first, from the frequent inflammatory attacks of the lungs, to which the woman was subject, principally of intercurrent bronchitis, for which she had been repeatedly cupped, as was evident from the numerous scars on her back; and secondly, from the age of the patient, who was near 60. It might be expected that the presence of so many solid bodies in the lung would be indicated by dulness on percussion, but it should be remembered that they were scattered uniformly through the organ, so that the relative clearness of one portion, in comparison with another, could not be observed. Thirdly, sound portions of the lung intervened between each of the cysts; and finally, some of the air-cells became distended in consequence of the repeated attacks of bronchitis.

It was difficult, therefore, to diagnose these cysts by unequivocal physical signs; but the frequent occurrence of bronchitis, without any obvious or assignable cause, should always induce us to suspect the proximity to the tubes of some source of irritation. In the present instance the repeated attacks of irritation arose from the efforts of nature to empty the contents of the cysts into the bronchial tubes, as was evident from the little funnel-shaped prolongations observed on the circumference of the cysts, and which appeared to be the remains of bronchial tubes.

The interior of the cysts was occupied by matter, partly tubercular and partly cretaceous, the latter being composed of phosphate and carbonate of lime. Dr. Greene concluded by remarking that an individual might reach a considerable age with these encysted tubercles in the lungs. The fibro-cartilaginous nature of the cyst isolated the tubercular deposit, so that, although such an individual might suffer from repeated attacks of bronchitis, he would yet escape the wasting hectic, which the coalescence of ordinary tubercle produces.—*January 31, 1846.*

MEDICAL MISCELLANY.

Case of Foreign Body in the Eye. By JAMES DIXON, F. R. C. S. E.,
Surgeon to the London Ophthalmic Hospital.

THE following case of expulsion of a foreign body, which had remained *eight years* in the anterior chamber of the eye, shows that the formation of a fibrinous cyst around such fragments of metal does not ensure the patient against the recurrence of inflammation, and enforces the propriety of immediately removing them whenever it can be done without serious injury to the organ(*a*).

(*a*) The late Mr. Walker observed that copper was “a substance incapable of solution within the eye.”—*Oculist's Vade Mecum*, 1843, p. 325.

P. G., aged 35, a shoemaker, slenderly built, and of pale, unhealthy complexion, came to the London Ophthalmic Hospital January 10, 1848, complaining of intolerance of light, pain, and impaired vision, in the right eye. The cornea was clear; the sclerotic presented a vascular zone; the iris moved sluggishly when exposed to the light; the pupil was drawn a little downwards and inwards. On the lower and inner part of the iris, midway between its ciliary attachment and the edge of the pupil, lay a small, rounded mass, the size of a mustard-seed, which seemed to be a foreign body, thinly coated with fibrin. The patient could still see large letters, but within three days had been able to read small print, with this eye. He stated that eight years ago the eye was struck (he supposed with a shot) as he stood a few yards distant from a man who was shooting sparrows. Pain and redness of the eye came on, and he consulted a medical man, who gave him medicine which made his mouth sore. The sight was not much affected at this time, and it remained good and useful—almost as good as that of the other eye—for about three years. Inflammation then returned, and he applied a second time for medical aid; mercury was administered, and at the end of a fortnight he was so much better that he discontinued his attendance. No further inconvenience was felt until the beginning of the present year. On his first visit to the hospital he was leeches and purged, and then calomel was ordered night and morning, with opium. Within three days the foreign body was more than half denuded of its fibrinous covering, and proved to be a thin, flat scale, like a fragment of a percussion cap. A fresh deposit of fibrin soon took place, and until the end of June inflammation continued, with varying intensity, but the foreign body was never sufficiently free from fibrin to allow of its being extracted without a risk of injuring the lens, which remained perfectly healthy. During February fresh deposits of fibrin occasionally took place, and were absorbed again: by the middle of March the fibrinous effusion on the hinder face of the cornea was so extensive as to hide the lower half of the pupil, and fine red vessels were seen passing into this fibrin.

On the 10th of April a little white elevation, with a dark dot in the centre, appeared in the middle of the fibrinous patch on the cornea, as if the substance of the latter were softening, and about to give way. Three days later a fine black point protruded; it was readily seized, and a minute scale of metal extracted, which, on being tested, proved to be copper. No escape of aqueous humour followed its removal, as it had become completely enclosed by fibrin, which formed a barrier behind, at the same time that absorption of the cornea was going on in front.

June 5. A dense opacity hides the inner half of the pupil, and, except a slight adhesion of the iris, is the only morbid result of the injury. The iris is active, the lens perfectly transparent, and vision good.

Stone in the Bladder ; Lithotrity ; Failure of Operation ; Refusal of Patient to submit to Lithotomy ; Death. Cyst communicating with the Bladder ; Diseased Kidneys, &c. By S. HUNTER, M. D., F. R. C. S. I., Belfast.

JOHN QUIGLY, aged 32, was admitted into the Belfast Hospital on the 8th of August, 1842, with a portion of calculus lodged in the urethra, immediately in front of the scrotum, in which situation it had been for a fortnight. He complained of great frequency of passing water, and pain in the bladder, extending along the urinary canal. Urine alkaline, s. g. 1,010, slightly coagulable ; deposits thick tenacious mucus in large quantity ; pulse 86. He had been in London under the care of Dr. George Busk, who very kindly furnished me with the following history of his case:

“He was admitted into the Dreadnought Hospital-ship on the 4th of June last, affected with the usual symptoms of calculus in the bladder. He stated that he had followed the sea twelve years, and had previously lived in Belfast. He was a strong man, of healthy appearance, but had paralysis of one side of his face, which he attributed to exposure to the sun at Rio de Janeiro, and which exposure had induced severe headach. About four years ago he received a hurt in the loins, unattended, however, with bloody urine, and since which he had occasionally been affected with pain in the region of the kidneys. In December, 1841, he had on one occasion a stoppage of the flow of urine while passing it, which continued for about five minutes, but was not attended with pain after micturition at that time. Before this occasion he had never had any sensible affection of the urinary organs, and had never, to his knowledge, passed any gravel.

“When admitted he complained of the usual train of symptoms attending calculus, and passed water three or four times every night: the urine was clear, of natural colour, with a light, mucous sediment, and reddened litmus paper. A calculus was immediately detected with the sound, and was not at first deemed to be of large size, and I resolved upon employing lithotrity, to which the case seemed in all respects well adapted. This operation was performed without any difficulty, and with scarcely any pain, two days after admission, and it was then found that the calculus was of a larger size than was at first anticipated, and was apparently of a soft nature. Many small fragments of stone subsequently came away, and the operation was followed by but little irritation ; he was, however, in consequence of some pain about the bladder, cupped on the sacrum, and in three days afterwards the lithotrity was repeated, and the stone seized twice, the first time with little effect, and on the second it was apparently broken in half. Numerous fragments followed this second attempt, which was also the cause of considerable inflammation of the bladder, and consequent constitutional irritation. A very large quantity of ropy, mucoid pus passed with the

urine, which became alkalescent. Nothing more was attempted in the way of operation till this state subsided, which it did, in a great measure, in two or three weeks, when lithotripsy was again employed and the stone seized twice, and more fragments came away, —in all about three drachms from the three operations.

“The local and general irritation caused by this last operation was so great that I resolved upon relinquishing that mode of removing the calculus, and determined upon employing lithotomy when the man's health should be improved. I judged at the time that the kidneys had participated in the inflammatory action, as he had vomiting, and pain in the region of these glands. The man, however, would not consent to the operation of lithotomy, and preferred leaving the hospital, which he did on the 18th of July, in pretty good general health, though, of course, unrelieved in the principal complaint, and, in fact, suffering more than he had done on admission.”

All attempts to extract the stone by the urethral forceps failed, and its removal was finally effected through an incision made over it, which was followed by feverish symptoms, and some infiltration of urine.

September 27th. Until this last week his pulse has never been below 100, generally 120; calls to urinate very frequent; has had irregular rigors followed by heat and perspiration; pulse to-day 90: irritability of bladder less since he began to take a mixture with benzoic acid and balsam copaiba.

29th. An effort was made to crush the stone this morning. It was distinctly felt on introducing the lithotrite, after injecting the bladder, but on trying to seize the calculus it slipped away, and although the instrument could be felt in contact with it at a certain point, every attempt to grasp it failed. Enema opiat. statim.

30th. Calls to pass water less frequent; *feels less pain, and is altogether more comfortable than he has been for many weeks previously.*

October 3rd. Had pain and tenderness on pressure over right kidney, for which he was leeches with relief; symptoms are now much the same as before. He resolutely refuses to allow the operation of lithotomy to be performed, and as there was good reason to suspect diseased kidneys, he was not urged to submit to it so strenuously as he would otherwise have been.

He died on the 21st of November.

Post Mortem Examination, eight Hours after Death.—Body emaciated; slight œdema of feet and ankles; head and chest not examined.

Abdomen.—Both kidneys were found enlarged, of a light yellowish colour, and mottled on the surface; when cut into they presented a good specimen of Bright's “granular kidney.” The pelvis of each was coated over with soft and recently effused lymph, slightly adherent, the surface underneath which was extremely red and vascular; ureters a little dilated. The bladder contained two calculi, the largest about the size of a walnut, and the lining mem-

brane almost black from venous congestion. To its left side, and adherent to the rami of pubis and ischium, was a sac lined by mucous membrane, about as large as a pullet's egg, communicating with the bladder by a rounded opening, an inch in diameter, in the contracted state of that viscus; the other abdominal viscera healthy. The two calculi together weighed ten drachms all but ten grains.

In commenting on this case Dr. Busk remarks, that "The operation of lithotrity in this man was attended with very bad results, and in all probability, lithotomy would have cured him at little risk; and, secondly, that disease of the kidneys had been, in a great measure, excited by the operations; and, thirdly, that the presence of two calculi was owing to the retention of a fragment broken off by the lithotrite."

The only other point worthy of remark is, the great remission of the symptoms for twenty-four hours after the last attempt at lithotrity, owing, I imagine, to the stone having been forced into the cyst communicating with the bladder, which circumstance would also account for my inability to seize the calculus, and the return of the severe symptoms as soon as it again became displaced.

The calculus has been examined by Professor Aldridge, and found to consist of ammoniacal magnesian phosphate, with a small fibrous nucleus.

Case of Imperforate Anus. By J. PUREFOY, M. D., Cloughjordan.

A LARGE female infant was born on the 6th June, 1847, without any trace whatever of an anus; the genital organs were perfectly developed, and the infant otherwise well made and healthy-looking. It gradually, however, became deeply jaundiced, and passed into a state of almost perfect coma, in a period of about thirty-six hours from its birth. At this time the midwife brought the child to me, that it might be relieved by an operation; which was effected by a broad-pointed lancet, an incision being made in the situation where the anus should exist. It was found necessary to carry the incision to nearly the depth of an inch, not at once, but gradually, at the same time carefully observing, during the violent straining efforts of the infant, the appearance of a tumour, or any degree of fulness at the bottom of the incision.

Immediately on the appearance of a tumour it was opened by a free incision, when a prodigious quantity of dark, fœtid meconium flowed out in a continuous stream. The unloading of the bowel was completed by the aid of tepid water lavements, and a small tallow candle used as a rectum bougie. The child recovered the operation perfectly, but I did not ascertain whether it had the power of subsequently retaining the fæces. At the lapse of about three months I learned, much to my disappointment, that the little patient had died, and I have reason to suppose that its recovery was not wished for by the parents, as they never consulted me as to its treatment while ill.

The following suggestions occurred to me in reflecting upon this interesting case.

First. That we should not operate for twenty-four or thirty-six hours after birth, in order that the meconium may collect in the lower part of the rectum; by this means the straining efforts of the child may produce a tumour, or fulness, in the site of the anus, showing where the incision may be made with most advantage.

Secondly. That the incision should be deepened slowly and progressively, watching for the tumour or fulness at the bottom of the incision, which should be opened whilst rendered tense by the straining efforts of the child.

Thirdly. That a tallow-candle should be used for some time, to prevent undue contraction of the anus; and that purgative medicine should be strictly forbidden.

Case of Tapping in Hydrocephalus. By CHARLES ARMSTRONG, M. D.,
Cork.

JOHANNAH MURPHY, aged seven weeks, was observed by its parents, who were young and healthy, three days after birth, to have "a separation of the bones of the head," which increased rapidly, dilating the lateral and antero-posterior measurements of the head to an enormous extent. The fontanelles bulged out, and the head, from its great weight, required constant support. The expression was strange and unnatural, from the great disproportion between the upper part of the head and the face; the functions were natural, there were neither convulsions nor paralysis; pupils active, but the eyes constantly rolling; she sucked tolerably well, and seemed free from pain.

On the 16th of February, 1840, I tapped the lower part of the posterior fontanelle, and drew off fourteen ounces of a limpid, straw-coloured fluid, and though much remained, I withdrew the canula in consequence of collapse setting in, which continued till the bones were placed *in situ*, and steadily supported by a bandage. When this was accomplished the eyes ceased to roll, the countenance lost its peculiar expression, and the infant sucked the mother's breast with more decision than it had ever done before.

The condition of the head immediately after the operation was very striking, and gave the idea of a large wet bladder, with a number of loose bones freely moving about in it, the occipital falling loosely down on the back of the neck.

On the third day after operation the child was improved, and was described by its mother to have slept sounder than before, and to have sucked with a better appetite.

The head again increased, and on the 5th of the following month I drew off seventeen ounces of the same kind of fluid, the operation being followed by *considerable* collapse, which continued till the bones were placed *in situ* as before. In about a fortnight after, the infant died, having suffered neither convulsions nor paralysis to the last. It seems that gangrene of the integuments had succeeded, from

neglected pressure of the bandage, by re-accumulation of the fluid; for I was unable to watch the finale of the case, having been summoned to the Cork Assizes, on behalf of the Crown, a distance of ninety miles from my then residence, and was detained then for ten days at the Assizes.

My absence prevented the attention that was necessary under such circumstances, by reason of which sloughing of the integuments took place, that hastened the termination of a case that, perhaps, would never have ended favourably.

A Letter to the Editor on the present Appearances of the Hospitals of Paris. By CHARLES KIDD, M. D., Limerick.

DEAR SIR,—If the storm which has lately burst over the Continent has been followed by but few of those many social advantages our imaginative neighbours would lead us to expect, it is not entirely without interest—a melancholy interest, indeed—in the numbers of wounded at present in the hospitals of Paris; and it is likely to be not without very eminent advantages to surgery, and the treatment of gun-shot wounds in particular. Under this impression, and having visited these hospitals lately, I have thought a word or two on the subject not out of place at present. I confined my attention to the chief hospitals, the Hotel Dieu and La Charité; the other hospitals, prisons, &c., where the wounded had been huddled together, not being easily accessible to the public. I found by far the worst cases at St. Louis and La Charité; here Velpeau, Malgaigne, and Jobert, seemed completely inundated with frightful cases: bullets through the shoulder-joint, through the lungs, stomach, and head; fractures of every imaginable variety; deep granulating wounds communicating with the cavities; mortifying extremities; ugly conical stumps after amputation performed the day of the fight; injuries of arteries; again, wounds where these vessels had escaped as if by miracle; injuries of the great cavities, &c.; in short, every variety of surgical accident that we can well imagine.

What strikes you at first entering the wards of the Hotel Dieu and St. Louis is the quietness of everything; the silence and propriety of the *élèves*; the anxiety of the medical man going round for the welfare of the patients, and the information of the pupils, by whom, I must say, I never witnessed greater kindness or attention shown to any class of patients. At the entrance to each ward the *Personnel* and *Reglemens* are posted up; the former containing the names of every one engaged in the ward, medical men, chaplain, matron, nurses, &c.; the rules also not less conspicuous. The pupils, however, are interdicted from stopping in the ward after the surgeon, from percussing the patients, or in any way interfering with them: matters of rather questionable utility as far as the pupils are concerned.

The hour of visiting the hospitals is eight o'clock, A. M. The *blessés de Juin* were lying every where that accommodation could

be had. Many of the cases were of the most frightfully bad character: fore-arms torn in pieces by balls; hands shattered, and legs literally smashed by cannon-shot; by far the greatest number, however, were balls through the chest and shoulders, and all parts of the body exposed above the level of the barricade. It was quite wonderful to see what nature was doing for an immense number of these; the *Vis Medicatrix* seemed, indeed, all-potent. It was curious, too, to witness the nice parts the surgeons had to play: a word of comfort to one; a smile with another; a little bit of evasion with a third; many of them having, it is known, had more to do in the work of the barricades than they were willing to confess. There was an appearance of conscious misgiving about many of these poor creatures that one pitied. Several of them were wretched ghastly beings that an *emeute* always throws to the surface; many to whom death would be a respite from their thousand sufferings. There were also the young fellows of the *garde mobile*, especially at the Hotel Dieu; some of them wounded very slightly, others badly. One should see these fierce young fellows under every aspect to understand them; thundering along a *pas de charge*, or rolling in the grass at Versailles, without care or anxiety of any kind, except perhaps for fighting, and without a wish beyond that of standing sentry with a long gun, nearly twice the length of themselves, at the door of the camp. These nearly all recovered. One young fellow, a *garde mobile*, shot, it was said, one after another, thirty-five insurgents; General Cavaignac, seeing his undaunted courage, took a star off his own breast and put it on his. He was brought to the hospital next day, poisoned!

The general appliances of the hospital were excellent. Oiled silk, lint, charpie, sponges, ices, wines, jellies, and soups in abundance. Much more stress is laid on the article of diet than in our own hospitals. Everything seemed well managed indeed.

Among the more distinguished persons wounded in the late affray many were taken to hospital. The Archbishop of Paris, who received a ball in the lumbar region, fracturing the vertebræ, was taken to the *Hospice des Quinze Vingt*s. Damesme, one of Cavaignac's chief generals, on falling at a barricade near the College Henri IV., was taken to the hospital at Val de Grace, where he had his thigh amputated. At St. Louis one of the members of the Assembly, M. Dornès, was lying next to a *garde mobile*; next both were several of the insurgents, many officers of the line, &c. It is not to be wondered at, however,—these institutions are so admirably arranged, so well supported, and so cared for by the Government. A project has lately met with very general respect in the Chamber, of giving domiciliary medical attendance to all the poor of Paris, at the expense of the State.

The following is the official return of "killed and wounded" during these fearful days:—

Wounded, received from 23rd to 28th June.—Civilians, 806; soldiers, *garde mobiles*, and *gardes republicques*, 813: total, 1619.

Amount of Dead brought to Hospitals.—Civilians, 129 ; soldiers, *gardes mobiles*, and *gardes republikes*, 33 : total, 162.

Total killed and wounded.—Civilians, 935 ; soldiers, *gardes mobiles*, and *gardes republikes*, 846 : total, 1781.

One hundred and sixty-two dead corpses were brought to the doors of the hospitals to be recognised by their friends !—the Morgue, the usual place for such exhibitions, having been obliged to be closed up. Many of these dead bodies were mangled and shattered by cannon-shot, or torn by the cavalry horses. Of the wounded, fifty-three civilians and 104 *gardes mobiles* left again on having their wounds dressed, while 195 died within the first five days ; leaving at the time of my attendance over 1400 cases, with some 300 or 400 in the temporary hospitals.

A feeling of sorrow seems to fill every one now in Paris for what has happened. Presents of lint and charpie are deposited at Notre Dame and other buildings, for the use of the sick. Even many of the ladies of the city offered their services, staying up at night with the wounded. A good deal has been said about poisoned balls, but, I believe, without any foundation. Many of those extracted were made of copper and zinc, and other unusual metals, but the wounds inflicted by them did not seem possessed of anything peculiar. The number of wounded in the hospitals at present far exceeds that of any other revolution. A somewhat singular suggestion has been mooted, that of M. Gannel, to embalm all those that fell during the four eventful days. It seems he has made an immense fortune by his process. He is to be seen every day at the Hotel Dieu, and has been worrying the Government about it. General Cavaignac has turned a deaf ear to the matter. In his great zeal, however, he offers to embalm republicans of every sort who may honour him with their confidence.

At La Charité, under Velpeau, and MM. Gerdy and Morel-Lavallec, were 115 wounded, which I took the trouble of classifying as follows:—Injuries of head, 8 ; thorax, 8 ; upper extremities, 34 ; abdomen, 13 ; lower extremities, 33 ; various minor injuries, 19.

Several amputations were performed. Other cases, though of a very grave character, were apparently doing very well under the ordinary treatment. In one case the ball went right through the popliteal space without injuring either nerves or vessels ; in another, a man shot in the back of the head, the ball went out of the mouth : both were apparently doing well. In many instances the ball had gone through the shoulder-joint without any very manifest symptoms supervening. In another case a man was shot through the kidneys,—the ball making two openings,—actually broken in two on the bodies of the vertebræ. In another case, doing well, the entire foot was shattered by a cannon-shot. In another a very severe injury occurred in the tract of the femoral vessels, without, however, any hæmorrhage : the man seemed as if nothing had happened. The injuries of the lower extremities were, indeed, almost beyond belief. In one singular case of injury of the head the entire of the coverings of the

lower jaw had been swept away, leaving the cartilages of the larynx exposed; there seemed no unusual hæmorrhage. In a severe injury of the upper extremity, the ball traversed the upper part of the shoulder, wounding the spinal column, and producing a want of sensibility and motion; the poor man was alive simply because it had not gone one half-inch higher, and cut off the origin of the phrenic. Another poor creature had received a bayonet thrust through his eye; another had a ball through both legs. In fact, every variety of horrid injury was to be seen. Amongst the newest ideas on gun-shot wounds is perhaps that of Velpeau, at La Charité, who has originated a classification and treatment of such lesions on the principle that they are analogous to burns. Every one knows the six degrees of burns of Dupuytren, and the treatment each will require. Velpeau states that the same thing holds in gun-shot wounds. The reparative process is the same; the symptoms the same; the treatment not very different. The ancients, I need scarcely say, held this doctrine till demolished by Ambrose Paré. Velpeau tells his class that the ancients were right; they saw the thing as a fact; but others came and built up a set of theories on it, that ultimately hid it from our view. The work of reparation, in many instances, is certainly the same; perhaps the shock to the system also.

At Saint Louis Hospital, under Jobert and Malgaigne, I found the worst cases I had seen. Many of them are there yet, and some are very interesting subjects of study. This hospital is beautifully kept; several officers of the national guards and line were under treatment; and every facility is given to the pupils. Malgaigne in particular, an excellent surgeon, is wonderfully communicative. As at La Charité I classified the cases as follows:—Injuries of head, 25; thorax, 18; upper extremities, 100; abdomen and pelvis, 20; lower extremities, 142; minor injuries, 15.

Some of the wards are under the care of M. Gosselin, and contain exceedingly bad cases; one, an entire destruction of the thigh by a cannon-shot, with fracture of the femur; another, a frightful crushing of the hand; several injuries of the most desperate kind of the lower extremities; one, a ball in the track of the ascending colon and gall-bladder, without any very bad symptoms.

Under the care of Malgaigne I saw here two cases in particular of extensive injury of the shoulder-joint; mortification in one, removal of the extremity at the joint in another. There were crowds of instances of balls through and through limbs without any bad effects. In amputating I think the French surgeons do not clean the bone as we do in this country. The thing is done in an instant, but I am quite satisfied not so well as it might be. Whether on account of the hurry of the operation, or the change worked by chloroform, I do not know, but I had seen the most formidable operations also performed without removing the patient to the operating theatre. If the operation can be well done under such circumstances, perhaps it is an improvement, as so much of the strength of the patient as would be lost by the removal is husbanded. The process of “chlo-

roformizing" is not managed so well as I have seen it at home; the patient is merely let smell to the vapour for some time. Speaking of this powerful agent perhaps I may say it is at present, in some institutions in Paris, somewhat under a cloud, from the many deaths that have occurred from its use there and elsewhere. The chloroform bottle is, however, carried about the hospitals as regularly as the other *armamenta medicaminum*. In one ward of St. Louis, for instance, we came to a desperate case of injury of the leg; Malgaigne called for the chloroform bottle while visiting the beds next it; the poor man was prepared for his fate, put under the effects of the anæsthetic, and on the return of Malgaigne settled for amputation. An assistant compressed the artery. The knife was run through over the bone; a large flap down to the patella was formed in a second; a sea of thick, grumous, pus-like matter followed; the bone was at once sawed through without any effort to save more flesh, the flap being somewhat limited; a large vermiform clot was taken out of the vein; the chief artery tied, and the rest left to the assistants. Not a word was spoken all the time; Malgaigne seemed as collected and cool as if it were any ordinary case, and passed on to the other end of the ward. Scenes like this are of hourly occurrence, and during the first few days of the insurrection were even still more frequent. I am quite aware that there is nothing very remarkable about removing a limb now-a-days. I think, however, that any one anxious to see what the system will bear in that way, or the other fearful injuries it will still battle against without any obvious effect, will find a rich field for study among the hospitals and ambulances of Paris for the next two months. With few exceptions, every thing is left to the *vis medicatrix naturæ*,—the expectant system of the French, which, if not exactly the best, is, perhaps, superior to the opposite one so common elsewhere. Indeed any one anxious for a proper conclusion as to what may be left to nature and what not, cannot fail to find it in the Paris hospitals.

At the Hotel Dieu, in the ten days* preceding the 2nd of July, 450 wounded were received. In the wards of Roux, of 127 wounded, 25 died almost immediately; 100 of these were cases of penetrating wounds of the abdomen, in one of which the liver must have been pierced; two cases in which the lungs were wounded; several other injuries of the chest and upper extremities; one very fearful case, in which the man was shot through the loins, the ball traversing the bodies of the lumbar vertebræ, producing retention of urine, paralysis of motion, and *not* of sensation, in the lower extremities: death after four days. 31 quitted the hospital cured, leaving at the time of my visit the following under the care of Roux:—Injuries of the head, 11; thorax, 1; upper extremities, 23; abdomen, 2; lower extremities, 28; total, 73.

Under the care of MM. Manec and Voillemier:—injuries of the head, 7; thorax, 5; upper extremities, 26; abdomen, 7; lower extremities, 29; minor injuries, 3: total, 77. 150 in all.

In the extraction of balls the French surgeons use a great deal

of discrimination, and believe that making counter-openings, and unnecessarily enlarging the original wound, ought not to be practised; that, like the abuse of the trephine, the means of cure may lead to worse effects than the first injury, and that we should *wait for symptoms*. Two very ingenious instruments have been invented for getting at balls; like all such nice things, however, they are seldom used. One termed the "*Alphonsin*," differing little from the lithotrity instrument, we are all familiar with at this side of the channel; the other, a little more complex, and containing a sort of cork-screw addition for fixing the ball and drawing it away. From the circuitous direction of balls in general, it is quite obvious what little use such instruments can be.

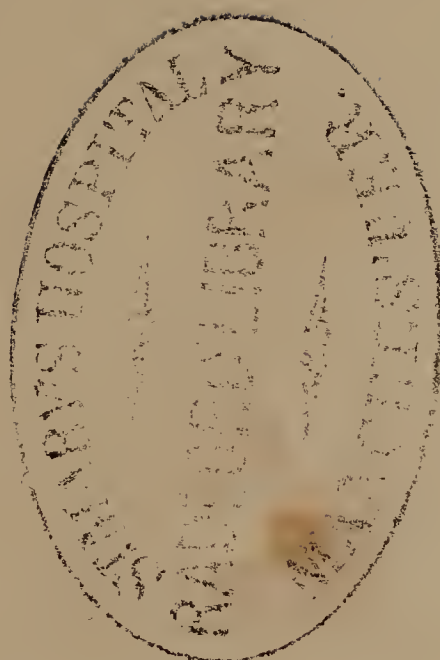
At the *Maison de Sante* 90 were admitted; of these, 8 were severe penetrating wounds of the chest,—many of them doing well after repeated bleedings. It was somewhat curious to witness the apparent want of symptoms in several patients here, though the most vital parts were evidently implicated. In one man the ball had gone through the spine of the scapula, fracturing that bone, and giving obscure evidences of its presence in the chest: after two bleedings he appeared recovering. In another case, though the ball had gone through and through the chest, injuring all the parts at the base of the lung, no bad symptoms had presented themselves. The worst appearances, however, may be a work of time; the immunity from pain or constitutional disturbance, so soon after the receipt of the injury, being a little fallacious. Much of it, however, I would be inclined to ascribe to the assiduous attention shown the patients, and the quickness with which any inflammatory aggression is subdued by bleeding. A *garde mobile* suffered under a wound of the head for some days; the brain was quite perceptible; reduced to a reddish pulp, it seemed insensible; pulsating as usual. He did not complain of anything unusual either, but died four days after. At this little hospital, out of 90 admitted during the insurrection, amputations were performed eight times.

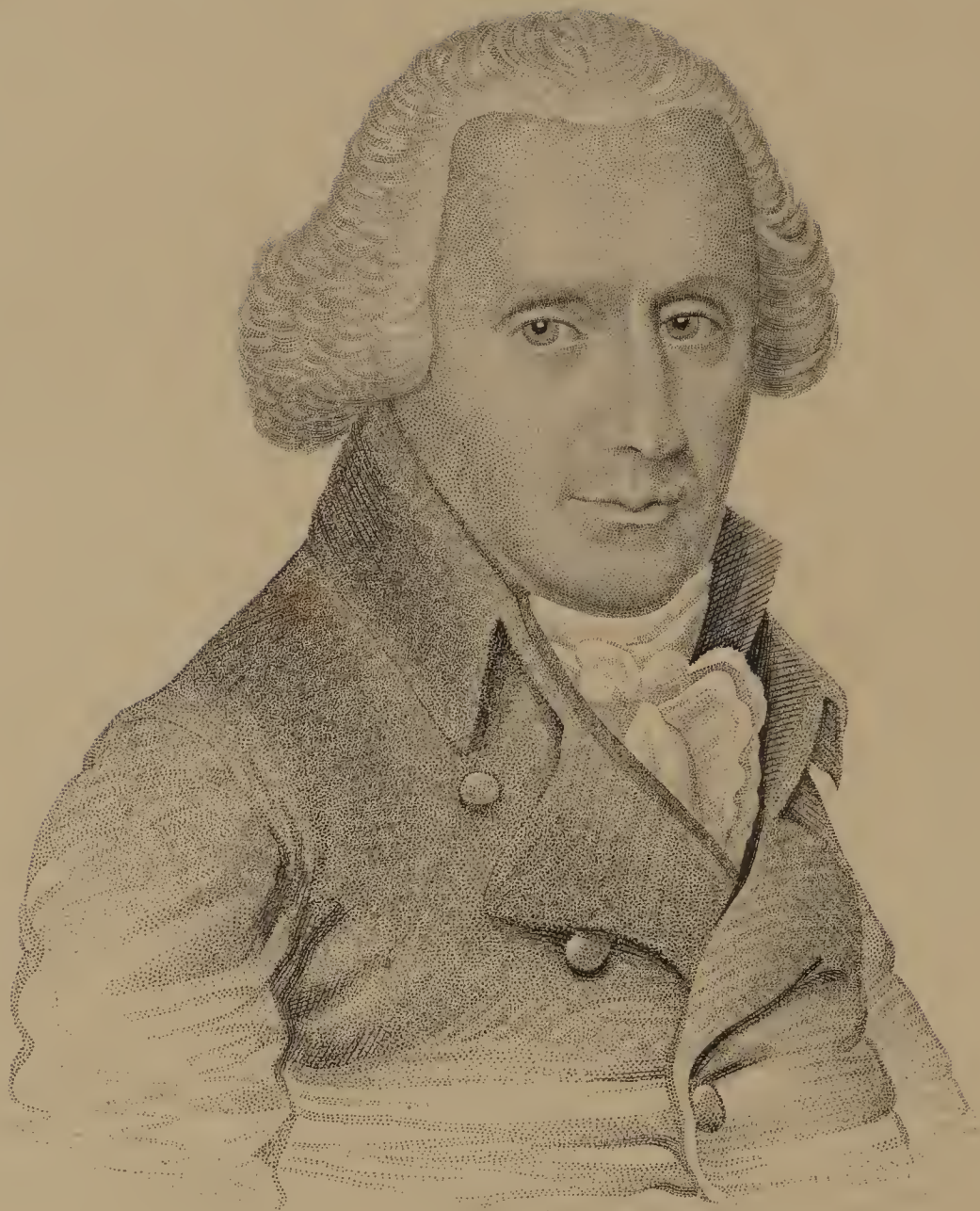
At one of the temporary hospitals I found 75 wounded, of the ordinary character of cases: there were only a few about which there was anything peculiar. One man received a ball at the external angle of the eye, which entered deeply into the face: there seemed no bad symptoms. I should say, however, the commissure of the optic nerve had been injured. *He was blind of both eyes*. Several instances of injuries of the chest presented themselves, where the ball had gone round nearly the entire thorax without entering: these patients were recovering. One, indeed, in which the ball had to all appearances entered the chest, had got severe inflammation of both lungs and pleura; much fear was entertained for his life. In one of the beds a poor fellow, surgeon of one of the regiments of the line, elicited much sympathy. In no way daunted by the crash of barricades, he remained with his regiment till struck by a ball, which shattered the lower end of the femur, going through the knee-joint. The poor fellow seemed quite collected, and great hopes were entertained for his recovery.

At Val de Grace, a military hospital under the care of M. Baudens, something over 100 patients, many of them very severely wounded, were received. The treatment seemed to differ little from that in the other hospitals; refrigerents, to keep down inflammatory action (ice, cold water, &c.), purgatives and bleeding, where necessary; and attention, the most assiduous, to changes as they occurred. Fomentations of various kinds, when suppuration set in, and other matters as the cases might require. M. Baudens does not seem a great advocate for amputation. He had operated, however, fifteen times after the days of June. 16 patients had sunk from the effects of their wounds. The remainder were progressing favourably. Of the number in this hospital I made the following classification:—Injuries of head, 12; thorax, 6; upper extremities, 35; abdomen, 8; lower extremities, 47; minor injuries, 15: total, 123. A somewhat singular case occurred here, that of a young soldier, in which the ball impinged on the eye, producing a contusion of the eye-lids and cornea merely, to all outward appearance with little constitutional symptoms, but in whom the shock to the eye caused complete blindness! Here, as everywhere else, one sees the different character of the cases, among the well-fed military and the but too often wretched *ouvriers*. Several of the latter were attacked with gangrene. The treatment in all the hospitals is, perhaps, a little too general; what is ordered for a stout *mobile* being likewise ordered for a starving insurgent. All these injuries not requiring amputation are treated by cold applications, and venesection if necessary, followed, after reaction, by emollient cataplasms. There is very little cutting or enlarging of wounds, and a great deal is left to Nature. The relative mortality will, perhaps, prove whether this or the opposite system is to be preferred. In two of the worst cases of wounds of the chest here, the operation for empyema had to be performed.

On the Use of the Solution of Caustic Potash in relieving Strangury.
By ROBERT MULOCK, M. D., Dublin.

IN three cases of strangury, caused by blistering with cantharides, I found the solution of caustic potash a perfect remedy. Two of the cases were head affections, where opium was inadmissible. Thirty drops, given in half a wine-glass of water every hour, gave relief before the third dose was exhibited. What led me to the use of this preparation was its known effects in relieving irritation of the bladder in other cases, and also its efficacy in relieving the stings of wasps or bees when applied to the skin. I considered that it might also relieve the acrid principle of the cantharides. Indeed from its effects, it would probably be a remedy for an overdose of that medicine, if given in proper time. In looking over the various works on irritative poisons, I find no antidote to the poison of cantharides, and mention this now that further trial may be made of its effects in giving relief.





= Sir J. Halloran

ILLUSTRIOUS PHYSICIANS AND SURGEONS IN
IRELAND.

No. VI.

SILVESTER O'HALLORAN, M.R.I.A.,

Surgeon to the Limerick Infirmary : Honorary Member of the Royal College of Surgeons in Ireland, &c. &c. (a)

With a Portrait.

IN a recent volume entitled "Revelations of Ireland" the author asserts, that, "from a variety of causes, the bar in Ireland has enjoyed almost a monopoly of the talent of the country." True it is that the legal profession must, from the circumstances under which it is placed, ever enjoy a greater amount of public attention, for the time being, than any other. Political in its nature; and its members, unhappily but too frequently called upon to plead a country's in a client's cause; hourly brought before the public and their fellows in the court, the arena, or the senate; with the highest offices in the State open to them as the reward of talent, the price of fidelity, or the premium for political bias or partisanship,—we should naturally expect the advocate, the minister of justice, and the lawgiver, to rank highest among the professions, and the offices and rank to which the professions lead in this country. Without wishing in the slightest degree to detract from the transcendent talent for which the members of the Irish bar have been so long conspicuous, we must, however, claim for the medical profession at all times an equal share of ability with the members of the legal profession,—their brothers of the same race, kindred, and country;—and, for the last century and a half, a somewhat greater advance in general knowledge, a more extended professional and general literary reputation, and for the establishment of far more lasting monuments of charity, benevolence, and industry, as well as for equal progress in the advancement of truth, the revival of learning, and the propagation of nationality in this portion of the British

(a) We have been for some time past engaged in collecting materials for a biography of Silvester O'Halloran, but although several of his descendants had existed in Limerick up to a very recent date, we have not been able to gather much of his domestic history. Our esteemed friend, Dr. Charles Kidd, of Limerick, to whose talent and learning we beg to make this public acknowledgment, has, however, furnished us with a sketch of the life of his distinguished townsman, of which it will be seen we have largely availed ourselves in the following memoir. We also beg to express our acknowledgments to Captain Henry D. O'Halloran, of the 69th Regiment, the grandson of the subject of this memoir, who has likewise furnished us with such materials as were in his possession, and also placed at our disposal a miniature from which the accompanying engraving has been made. To the Rev. Mr. Murphy, P. P. Limerick, we are also under obligation. The miniature was copied by Mr. Connolly, and engraved here by Mr. M'Dowell.—ED.

dominions. O'Connell, Plunket, Curran, and Bushe, as well as Grattan and Flood, the country claims as orators, statesmen, and patriots, not mere lawyers. Examine into our domestic history of the last century, when eloquence frequently took the place of law, and personal invective silenced argument; when judges, it is said, were often won by jokes, juries biassed by harangues, and witnesses generally brow-beat by abuse;—and where do we find the history of the Irish bar and its members;—where are their writings, professional, general, or national;—where the monuments of their benevolence;—what institutions did they create;—what libraries establish;—what great benefits have they conferred upon the country at large? Not so the medical profession;—though not political as a body, its members upheld our nationality, investigated and preserved our history and antiquities, fostered and enriched our literature, blessed the country with noble and largely endowed hospitals, and benefited their own profession by the institutions which they created. Such men were Sterne, Molyneux, Mullen, Dun, Robinson, and Rogers, as well as Maurice O'Connell, O'Halloran, Charles Smith, Steevens, Mosse, Rutty, M'Bride, Brown, and many others whom we might enumerate, whose works have come down to us, and whose institutions still benefit our country and adorn our city.

We may with pride point to the labours of the medical profession for the last thirty years; for after the frightful collapse which ensued in this country, and particularly in the metropolis, during the first few years of the present century, the young school of medicine in Dublin first began to show signs of vitality, and sprung to its present gigantic growth in an almost incredible space of time; and the echo of its fame, the reputation and the writings of its authors and teachers, was soon carried abroad, and valued and honoured wherever medicine was acknowledged as a science.

Foremost amongst those members of the medical profession and men of science and letters who have upheld the character of the general and professional literature of this country during the middle and latter part of the last century, stands the individual with whose portrait and memoir we now present our readers. Descended through a long line of Irish ancestry, whose forefathers ruled for centuries in the land,—and counting among them the bard, the poet, the annalist, the priest, and the warrior, as well as the hereditary physician,—the name of O'Halloran has claims upon the respect and veneration of those amongst us who still love the soil, and are acquainted with the early history of their country. There are few Irish families of antiquity and note whose genealogy cannot be accurately traced for several centuries, and the history of that now under consideration can be followed up to a very early period indeed. In the “*Alphabetical List of Ancient Irish Territories, and by what Families possessed, both before and after the English Invasion,*” left us in his *History of Ireland* by O'Halloran, we learn that the territory of the O'Hallorans of the Hy-Brune race was Clan-Feargal, which “comprehended twenty-four townlands situate in that portion of the

east part of Lough Corrib on which the town of Galway now stands. Aileran, surnamed An-Teagna or the Wise, regent of the university of Clonard, in the seventh century, and one of St. Patrick's biographers; and St. Finbara, first bishop and founder of the Cathedral of Cork, were of this sept; as also William Halloran, better known by the name of William Ocham or Ogham (on account of his profound knowledge in the ancient hieroglyphic character of the Irish). He was styled Prince of the Nominals; taught in the University of Oxford in the beginning of the fourteenth century, and was the great opponent of the celebrated Scotus in that University"(a). As may

(a) See O'Halloran's General History of Ireland, 4to. edition, vol. ii. p. 388-9. From the house of Clan Feargal, of the tract Debrin Feardha, near Galway, the subject of this memoir was descended. The O'Connies were possessed of a portion of this tract till expelled by the O'Flahertys and O'Hallorans, descendants of Brien, eldest son of Eochaidh, monarch of Ireland. There was another family of the name of O'Halloran, whose territory, called Faith-in-Halluran, extended from Tulla to near Clare, in Thomond; but it would appear that Silvester O'Halloran sprung from the Galway family.

Sir James Ware says that Clan-Feargal, an ancient territory comprehending twenty-four townlands seated on the east side of Lough Corrib, on part of which the town of Galway now stands, was the ancient seat of the O'Hallorans.—Eccles. Hist. vol. ii. c. vii. p. 47. Mr. Hardiman, in his History of Galway, gives the following notice of some of the possessions of this family. Clanfergh, or Clan-Feargal, lay on the coast side of Lough Orbisen or Corrib. It consisted of twenty-four villages, in which Galway, Clare, and Roscam are now situate, and was the lordship or dominion of the O'Hallorans until after the arrival of Henry II.—p. 3, note ^h. "Four miles west of Galway, near Barna, are the remains of an old castle which formerly belonged to the O'Hallorans. The Lynch family acquired this ancient inheritance by marriage with an heiress of that old Irish sept."—p. 18, note ^s. The estate of Pulnoromly, about a mile west of Galway, in possession of the Skerrett family, was acquired by purchase from one of the ancient Irish sept of the O'Hallorans, who were original proprietors of the entire district.

In Mr. Hardiman's notes and illustrations to Roderick O'Flaherty's Chorographical description of West or H-Iar Connaught, lately published by the Archaeological Society, we find much valuable information respecting the O'Hallorans; see pp. 54, 59, 253 to 260, 393, &c.; all which prove that the Clan O'Halloran were originally located in the vicinity of Galway, and were intimately connected with the O'Flahertys. In a fragment of an Irish manuscript in the library of Trinity College, (H. 2, 17.), reference is made to the Clan Feargail. See also the Book of Ballymote, fol. 54. Mac Firis, in his Irish Genealogy, gives the pedigree of the O'Halloran family for twenty-five generations,—from Eochy Moyvane, A. D. 358, to Dervock (David Oge). The ruins of the old castle of Barna in the vicinity of Galway, and the remains of a round tower at Roscam, still exist. "In the thirteenth century the O'Hallorans were dispossessed of their ancient inheritance of Clan Feargail, by the De Burgos, and were obliged to emigrate with the O'Flahertys to Iar-Connaught, where they built the castle of O'Hery, in Gnamore, and also, according to tradition, the castle of Rinvile, in Northern Connamara."—See the Archaeological edition of H-Iar Connaught, p. 254; also the Ogygia, p. 376; *Cathreim Thoirdhealbhagh*, or the Chronicles of the Wars of Thomond, A. D. 1309; O'Brien's Irish Dictionary, p. 514; and also the "Description of Connaught," preserved in the British Museum, p. 252. Mr. Hardiman possesses, and has published in the Archaeological work already referred to, several interesting documents relating to the O'Hallorans: chiefly deeds

be seen by the accompanying notes, the family of O'Halloran had greatly degenerated, and lost all its ancient patrimony, about the beginning of the last century, when we find the last of the line located in Limerick, and intermarried into the Mac Donnell family; and from this union sprung two of the most accomplished gentlemen and best scholars which this country produced for many years before or after. Joseph Ignatius O'Halloran, D.D., born in 1720, and educated in the city of Limerick, entered the Jesuits' College at Bourdeaux, in 1736, and was intended for the study of physic. "His early genius," says Mr. Ferrar(*a*), "his diligence and his abilities, soon drew the attention of these fathers, and they judged him an acquisition of too much consequence to their body to omit any inducement to his embracing the monastic life. After sustaining his course of philosophy with singular reputation, with the consent of his parents, he entered his noviciate in the order. He passed through all the degrees with an éclat that did honour to the discernment of this society. When appointed professor of philosophy he was the first that had courage and abilities to open the eyes of the University of Bourdeaux with respect to the futility of the principles of Monsieur Des Cartes, and proved to demonstration the unerring principles of Sir Isaac Newton, adding all that could be collected from his own and from the experiments of the most attentive observers of nature in its support." "After teaching philosophy with distinction for several years, he was appointed to the chair of divinity, in which he made no inconsiderable figure, until, compelled by the revolutions of the society, he returned to his native country, where he has distinguished himself as well by his zeal in instructing the ignorant as by his talent in the pulpit." Of his works some sermons and religious tracts, as well as a few fugitive pieces, are said to have been published while he was professor of rhetoric at Bourdeaux.

Silvester the second son, the subject of this memoir, was born in the North Liberties of the city of Limerick upon the 31st of December, 1728. Of his boyhood and college career we possess but scanty information, except that at a very early age he studied physic, surgery, and midwifery, in the schools of London, Paris, and Leyden, at that period the great marts of medical knowledge. It must be remembered that at this time the College of Surgeons in Ireland had not been created, and that our School of Physic possessed but little reputation; indeed, up to the beginning of the present century, we know of no professional man of eminence in Dublin—Molyneux, Daunt, the elder Dease, Morris, Cleghorn, Purcell, and Harvey, for

bearing date from 1594 to 1718. "In 1585, The O'Halloran was one of the contracting parties in the Indenture of Composition for Iar-Connaught with Queen Elizabeth." See also the references to this family in Keating's History of Ireland. In the neighbourhood of Galway, and in the adjoining islands, the name is still preserved.

(*a*) The History of Limerick, Ecclesiastical, Civil, and Military, from the earliest Records to the Year 1787, &c. Limerick, A. Watson, and Co., 1787, p. 370. See also Fitzgerald's History of Limerick.

instance—who had not studied for a considerable time in the Continental schools.

The barber-surgeons were joined with the apothecaries as the Guild of St. Mary Magdalene, under the charter of James II., in 1687(*a*). At the same time it is quite apparent, from collateral evidence, that there was a separate grade of practitioners in Ireland who served apprenticeships to surgeons duly qualified and only practising as such, and who were, on the expiration of their apprenticeships, examined and licensed to practise surgery, and, perhaps, midwifery, by the Surgeon-General of Ireland for the time being(*b*). By the Infirmary Act, passed in 1765, a Court of Examiners, composed of “the Surgeon-General, the visiting surgeon, the two assistant surgeons, and the resident surgeon or doctor of Steevens’s Hospital, and the five senior surgeons of Mercer’s Hospital,” met at the latter locality, and examined candidates who had “served a regular apprenticeship of five years to a regular surgeon”(*c*); so that we may fairly suppose, particularly from his having been surgeon to the Limerick Infirmary, that O’Halloran went through the usual course of study at the time.

But that we intend devoting a separate essay to the early history of medicine in Ireland at a future period, we would deem this a fitting place in which to make some observations upon that interesting subject ; for, to no one could it with greater propriety be dedicated than the learned medical antiquary who forms the subject of this memoir, and who had himself commenced the investigation of the subject. We cannot, however, although not quite in the chronological order of a biography, refrain from alluding in this place to his “Proposals for the Advancement of Surgery in Ireland, with a retrospective View of the ancient State of Physic amongst

(*a*) See Dr. Moore’s History of Pharmacy in Ireland, among the original communications of the present Number of this Journal, where the various charters are quoted, &c.

(*b*) For the particulars of this circumstance we refer our readers to the Memoir of Dr. Mosse, “surgeon and licentiate in midwifery,” published in the fourth Number of this Journal, for November, 1846, vol. ii. p. 567. In Dr. Gray’s Report on the Bill for regulating the Profession of Physic and Surgery, &c., Dublin, 1845, we read: “There are no records that I am aware of to show either at what time the surgeons of Dublin freed themselves from the corporate connexion, or whether there did not always exist an unrecognised body of surgeons who were never linked to the barbers, and who never claimed the honour. I am disposed to think there continued to be what we would now call illegitimate practitioners during the whole period included between the granting of the charter to the ‘barber-surgeons,’ in 1447, and the formation of the Royal College of Surgeons in Ireland, two years after the declaration of legislative independence.”—p. 16. The charter here alluded to is the original one granted by Henry VI., and quoted and confirmed by the charters of Elizabeth and James.

(*c*) See 5 Geo. III. c. 20 ; see also the Memoir of the late Dr. Percival Banks, in the last Number of this journal, vol. v. p. 570. Occasional exceptions were made to “experienced surgeons” who had not exactly conformed to the letter of the Statute, as in the case of Thomas Wilkins of Galway, and John Murphy of Tralee ; see 17 Geo. III. c. 8.

us”(a); at the conclusion of which we find the following propositions, portions of which evidently appear to have actuated the founders of our College of Surgeons nearly twenty years afterwards, and the spirit of which still actuates the boldest medical reformers of the present day. To O'Halloran, however, let the honour belong.

(a) This essay is contained in an appendix to O'Halloran's work on gangrene and amputation, published in October, 1765, and is dedicated to Lucius O'Brien, Esq., representative for the borough of Ennis.

From a quarto manuscript formerly belonging to the diocese of Down and Connor, entitled, “A Book of Presidents for the Ecclesiastical Court, Fran. Wotton, Registrarius,” at present in the possession of J. T. Gilbert, Esq., of this city, who has kindly placed it at our disposal, it would appear that the bishops and ecclesiastical courts in Ireland were in the habit of granting licenses to physicians, surgeons, and midwives, as was done by similar authorities in England, as appears by the following interesting extracts:

The following is in the handwriting of the reign of James I.

“*Licentia pro Obstetrice.*”

“To our well beloved in Christ A. B. of the parish of ——— Sendeth greeting in our Lord God everlasting. Whereas by due examination of divers honest & credible women wee have found you the said A. B. apt able & expert to exercise the office of a Midwife. Wee therefore doe admitt you & give you Authority to exercise the said office in any place within the Dioces of ——— aforesaid with the best diligence you may or can in this behalfe both to poore & rich, streightly willing & charging you to performe & accomplish all thinges about y^e same according to your oath thereupon made & given as followeth.

“1. That you be diligent faithfull and reddey to help evry woman labouring of child as well the poore as the rich, And that in tyme of necessitie you shall not forsake y^e poore woman to goe to y^e rich.

“2. Item—you shall neither cause or suffer any woman to name or put any other father to her child but only him which is the true father thereof indeed.

“3. Item—you shall not suffer any woman to pretend feigne or surmise her selfe to be deliv^{red} of a childe who is not indeed neither to clayme any other child for her owne.

“4. Item—you shall not suffer any child to be muredred,—maymed or otherwise hurt as much as you may & so often as you shall perceiv any evill or jeopr^die likelie to be either in y^e woman or child in any such wise as you shall be in doubt what shall chance thereof, you shall then forthwith in due tyme send for other Midwives & expert women in yr behalfe & use their advice & council therein.

“5. Item—you shall not in any wise use any manner of witchcraft, charmes, Sorceries, Invocations, or any other prayers then may stand with God's Lawes & y^e Kinges.

“6. Item—you shall not give any Councell or minister any herbes, medicines, potions or any other thinges to any woman being with chyld wherby shee should destroy, or caste out that she goeth withall before her tyme.

“7. Item—you shall not enforce any woman by paines or other ungodly means to give you more for your paines & labour for bringing her a-Bed than she would otherwise doe.

“8. Item—you shall never consent agree give or keep Councell that any woman be deliv^{red} secretly of that shee goeth with, but in the prsence of two or three honest women & there be two or three lights always reddey, with water also if the woman doe travell by night.

“ 1. That a decent and convenient edifice be erected in the capital, and three professorships founded : one for anatomy ; a second for the disorders of surgery and midwifery ; and the third for the operations of surgery ; and that each do give a course of lectures in succession every winter free to all people.

“ 9. Item—you shall be secrett, and not open any matter apprteyning to yor office in the prsence of any man or other unless necessitie or other urgent causes constraine you so to doe, or any otherwise than shall be seemly.

“ 10. Item—If any child be dead borne you yorselfe shall see it Buried in such secret place as neither hogg, dogg or any other Beast can come to it & in such place & after such sorte done that it be not preeived or found as much as you may & that you shall not suffer any such child to be caste unto the Jakes or any other inconvenient or unseemly place.

“ 11. Item—If you know any Midwives useing or doeing any thinge contrary to the end of the prmises you shall forthwith detect, open & shew the same to y^e ordnary for y^e tyme being.

“ 12. Item—That you shall use yorselfe in honest behaviour towards other women being lawfully admitted to the Office of a Midwife in all thinges accordingly.

“ 13. That you shall truly present to the ordnary for y^e tyme being all such women as you shall knowe from tyme to exercise the office of a Midwife without Lawfull admission therunto.

“ 14. Item—You shall not assigne or make any Deputy or Deputies to exercise or occupy under you in your absence the Office and place of a midwife But such as you shall knowe to be right honest & discreet & also apt, able & having sufficient knowledge cunning & experience to prforme ye said place & office. Neither shall you consent that any childe borne by any woman who shall be deliverd by you shall be carried away wthout. being baptized in ye parish by ye ordnary Minister where the child is borne.

“ 15. Item—You shall not be privie or consenting that any priest or other prtie shall in yor prsence, company knowledge or sufferance baptize any child by any Mass, Latine service & prayers, theⁿ such as are appointed by y^e Lawes of y^e Church of England. But you shall forthwith upon understanding therof give notice therof to ye ordnary for ye Time being. In witness of the prmises wee have caused our Seal wch wee use in that behalfe to be affixed to these prsents. Dated &c. ————”

In the handwriting of the early part of the reign of James I. this precedent appears to have been copied from the Winchester Registry.

“ Licentia. ad exercendum Artem Medici.

“ To all Chrian. people to whom these presents shall come T. R. Doctor of Laws Chancler to the Rt. Reverend father in God ———— Ld. Bp. of ———— sendeth greeting in our Lord God everlasting. Wheras wee have recd. sufficient testimony on the behalfe of ———— of ———— in the County of S ———— as well of his honest life & good conversation as also of his knowledge cunning & experience in the Art of Physick & Surgery subscribed with the handes of those to whom he hath ministred physick & practiced the Art of Surgery. And that upon due cxion. wee have found him well scen & experienced in the Same science or faculty Knowe yee therfore that wee the said T. R. Doctor of Laws & Chancrlr aforesaid have Licenced, & by these prsnts. doe Licence & give Leave to the said ———— to use the said exercise & to exercise the said Arts or Mysteries of physick & surgery in any place or upon any person within the Archdeconry of S. as by the Lawe & Statute of this realm wee may admitt him. He having first before us taken the oath of Supremacy of the King's most excellent Matie. in these cases provided. And we will that this our Licence or tolleration continue firm &

“ III. That an exact list be taken through the kingdom of all reputable surgeons, with their names and places of abode: that no other presume to practise surgery, much less perform capital operations ; and that all young surgeons, for the time to come, be interdicted practice till they shall procure a faculty of their abilities, signed by the above professors, or their successors.

“ III. In order to procure this, the candidate or candidates must, by written notice, apply for a public examination, and this to be published before the exhibition, which should be from twelve to three o’clock. That this hold for three days : the first entirely for anatomy ; the second for disorders of surgery, and if a candidate for midwifery, for this also ; and the third to finish with performing all the operations of surgery on a body, with their apparatus and bandaging. When a proper faculty, signed by the professors, is given to the candidate, to which if some little honour were annexed, it might add greater stimulus to the young students.

“ IV. That this course be attended with no kind of expense to the candidate ; and that it be free to all Irishmen *only*, without distinction ; genius being unconfined to principle or party, and such narrow considerations being worthier a little republic of Ragusa than the representatives of a powerful kingdom. And that the number be by no means limited, because the more surgeons of eminence, the better will the public be served.

good unto him untill it shall seem otherwise unto the said Reverend father in God or my selfe. In witness, &c. &c.”

In the handwriting of Charles the Second’s reign, circa, 1670.

“ *Licentia Concessa A : B : ad practicand. Artem Chirurgicam.*

“ To all xrian. people to whome these pnts. shall come: R. by y^e Grace of God : B. of L: Sendeth Greeting in y^e Lord God Everlasting: Whereas for avoyding of any accident dayly happening to many of his Maties. loving Subjects by the unskilfull practizers of Surgerie It was prvidently provided by speciall Acte of Parliament made for the reformation thereof In the third yeare of the Raigne of our Late Sovereign Lord of famous memory King Henry the Eight That it should not be Lawful for any persons within this Realme of England to use or exercise the Science or facultie of Surgerie, Except he were first Examined approved & admitted According to the Tenor of the said Statute. Know yee therefore that wee the said Reverend ffather having received sufficient testimonie from R: W: C: L: y^e Masters or govners. of the misterie & comonality of Barbers & Surgeons within the City of London incorporated of y^e Duc examination of A: B: of the parish of St. Sepulcher’s wtout New gate London a free Brother of the said misterie heretofore approved and admitted to use & exercise y^e said Facultie And examined the said A: B: concerning his sufficiencie therein, Doe now by these presents approve the said A: B: to be an able & sufficient Surgeon & he being first solemnly sworne before Sr. E. S. Kt. Doctor of Lawes our Chancellor to y^e Supremacie of the Kings most excellent Matie. Wee doe by these presents admitt him the said A: B: to use and exercise the said Misterie of Surgerie Soe farr forth as by the Lawes & Statutes of this Realme of England, wee may lawfully admitt him thereto. In witness whereof we have caused the hand & seale of our office to be sett unto these presents dated y^e

“ V. That a printed list be published annually of the registered surgeons and men-midwives of the kingdom, with their places of abode, signed by the professors; by which means the public will, as *heretofore*, know where to apply for certain relief.

‘ Fungar vice cotis, acutum
Reddere quæ ferrum valet, exsors ipsa secandi.—*Hor.* ’ ”

Upon the 7th of August, 1786, two years after the date of the Charter, Silvester O'Halloran was elected an Honorary Member of the Royal College of Surgeons in Ireland, having been proposed by Censor King, and seconded by Vice-President Bowes.

While on the Continent he paid particular attention to the study of the diseases of the eye, which at that time occupied the thoughts of many of the most learned professional men in Europe, and particularly those of Paris and Montpellier. This science was just then emerging from the mystery and obscurity with which the itinerant quacks and mountebanks of the end of the seventeenth century surrounded it; and the discoveries of Petit, Winslow, Morand, Cheselden, and Ranby, were gaining for this branch of knowledge the amount of interest which it deserved. While at Paris Mr. O'Halloran wrote a treatise upon the eye, for the purpose of clearing up some difficulties which then existed, particularly with regard to the seat of cataract. The manuscript of this treatise he laid before the distinguished Dr. Richard Meade, upon his return through London, who strongly advised its publication: and subsequently he placed it in the hands of Dr. Barry, President of the College of Physicians in Ireland^(a), with the hope that it would also meet with the approbation of that body and their sanction; but it would appear that the college had “neither time nor curiosity” to examine into its merits. He completed the work, however, and sent it to the press in the early part of 1749, and it was published in Limerick the year following, under the title of “A new Treatise on the Glaucoma, or Cataract”^(b). In this work, abounding in erudition and critical research, we perceive the dawning of that spirit of investigation and literary taste which subsequently distinguished this accomplished scholar and most acute surgeon; and when we remember that it was published before he was twenty-one years of age, and appears to have been written in his eighteenth and nineteenth years, it is, perhaps, one of the most extraordinary performances of the kind extant. As this work is but little known to the ophthalmic surgeon, and has not, we conceive, had that meed of credit awarded to it by subsequent writers, (with the exception of Haller), which it deserves, we here give a short account of its contents. It must be remembered that when it was written pathological ana-

(a) Dr. Edward Barry, son to Sir Nathaniel Barry, was President of the King and Queen's College of Physicians in 1749.

(b) For the full titles and imprints, &c., of all O'Halloran's publications see the list at the end of this memoir.

tomists and ophthalmic surgeons had not determined what glaucoma was; and although Brisseau, Maitre Jean, Ranby, and Heister, had established, by dissection, that cataract was an opacity of the crystalline lens, and not a filmy suffusion between that body and the iris, like—to use the language of the time—the vegetable production which floats upon the surface of water or other fluid in a bottle, as was generally believed before their day, their doctrines were neither generally received nor understood for many years after(*a*); and that the crystalline could not be the seat of the opacity, it was argued that it (the lens, the supposed seat of vision) was in the centre of the eye, whereas the cataract was so much anterior to it.

The subjects discussed in this treatise are;—the seat of cataract, to which he added several proofs that the “glaucoma was not a different disease, but a different name to express this disorder by,” the difference really consisting in the complication of cataract with amaurosis and the curability of the former; next, the subject of the circulation of the humours in the eye, which, after the appearance of Hovius’s tract, engaged much attention; and he also in it devotes some space to what he terms anatomical discoveries, in which he endeavoured to show that the iris was composed of radial fibres only, and that the vitreous humour was not surrounded by any proper membrane: he showed, however, that the crystalline lens had no adherence to the ciliary ligament, and described pretty accurately the position and relations of these parts; and asserted that the ciliary ligament and iris receded from the cornea opposite the external and internal angles of the eye. Both in this work and in his succeeding essays on the same subject, he denied the existence of a posterior chamber, and broadly asserted that the iris was not plane, but that

(*a*) Antoine Maitre Jean, *Traite des Maladies de l’Oeil*, Troyes, 1707; Brisseau, *Traite de la Cataracte et du Glaucome*, Paris, 1709; Heister, *Tractatio de Cataractâ et Glaucomate*, Altorfii, 1717. It is generally believed that Brisseau’s first observation was made upon the eyes of Bourdelote, Physician to Louis XIV.; but O’Halloran has shown that his original observation was made in 1705, on a soldier who died of diarrhœa, and that the account of the dissection and the examination of the eyes was read before the Royal Academy at Paris, on the 18th of November of that year. “But the academicians seemed to make slight of this discovery, nor did they think proper to give it a place in their works. However, this cool reception did not deter Brisseau from maintaining his new opinion: viz. that it was the crystalline lens which was constantly obscured in the cataract. However,” continues O’Halloran, p. 10, “it is to be noticed that though Brisseau and Maitre Jean were the first who evidently demonstrated the cataract to be an opacity of the crystalline lens, yet they were not the first who made that observation, for M. Lasnier, an eminent surgeon of Paris, who died in 1690, made the same remarks forty years before. And though he was countenanced in this opinion by Rohault (*In Tractatu suo Physico*, pars i. cap. 35), and Gassendus (*Opera*, tom. i. p. 371); and that in a little analysis of Mariotte’s, *Nouvelles Couvertes touchant la Vue*, it was publicly asserted ‘that oculists had found that there was no other way of curing that disorder of the eye called a cataract but by depressing the crystalline,’ *Journal des Sçavans*, 1668; yet it was not sufficient to gain it any esteem in the world.”

it bulged into the anterior chamber. Now, although the contrary is the normal position of this membrane, there are a great many cases of cataract in which it presents a convex surface towards the cornea, and even in the natural healthy eye we have very frequently remarked the same peculiarity. The removal, however, of the cornea, and consequent escape of the aqueous humour, on dissecting the eye, must always exaggerate this appearance. Among the anatomical discoveries claimed by O'Halloran, in his treatise on the Cataract, is that of a *cartilaginous substance* found by him in the semilunar fold of conjunctiva in front of the caruncle, and which is analogous to the nictitating membrane of some of the lower animals. He appears to have studied the anatomy of the eye very carefully, and made several experiments and dissections in order to arrive at the truth. Among these latter was that of suspending a young dog for some time by the hind legs, then tying both jugulars after the eyes had become suffused; and, having thus produced a natural injection of the internal parts, killing the animal and displaying the vascular arrangement. By this means he showed and figured in the plates appended to his book a very beautiful and minute injection of the vessels on the posterior capsule of the lens. There are two other subjects connected with the anatomical department of this work worthy of notice, viz., the theory now revived by a German oculist, that the aqueous humour is secreted from the back of the iris, and that the hyaloid membrane may be rendered opaque by immersion in various chemical solutions. It is true that there are many errors in the anatomical and physiological portions of O'Halloran's treatise, but they are the errors of the age, and our object here should be to set forth the opinions, not so much to canvass the doctrines of those whose memoirs we indite.

A work of this character, the first of the kind that issued from the Irish press, naturally produced a favourable impression for its author, and ophthalmic practice appears to have followed. A century ago this country was occasionally visited by itinerant oculists, of whom the most remarkable was the celebrated Chevalier Taylor, concerning whose feats the learned world are already acquainted(*a*). As might be expected from the publication of O'Halloran's essay, numbers flocked to receive their sight at the hands of the Limerick oculist, who soon bid fair to eclipse Taylor(*b*).

(*a*) See an Introductory Address delivered at the Park-street School of Medicine, Dublin, 1845, by W. R. Wilde, M. R. I. A., &c., and published in the *Lancet* for April, 1845.

(*b*) In the Number of Faulkner's Journal for November 26th to 30th, 1745, we find an advertisement from Taylor, who then resided in William-street, to the following effect: "The first Wednesday in January next will begin a short course of lectures on the means of preserving sight, calculated for the studious, to which the gentlemen of the faculty, the College, the clergy, and others of literature, are hereby invited by Dr. J. Taylor, oculist to His Majesty, &c." He also lectured in Stafford-street, and in the theatre in Aungier-street. In the 384th Number of the *Philosophical Transactions*, vol. xxiii. for 1724-25, we have an account of the operation for depression having

M. Daviel's splendid operation of extracting the cataract through an incision of the cornea, then occupied considerable public attention; and although by no means what the operation is at present, and at the time of its promulgation scarcely understood, still it bid fair to eclipse all former means proposed for the removal or displacement of an opaque lens. Although it is now well known that the French military surgeon commenced his operation by incising the cornea with a lancet, and afterwards enlarging the cut with a scissors, or, according to some accounts, passing a cataract needle through both sides of the cornea, and dividing all that portion of the membrane which lay beneath it with a scissors; yet as the precise mode of performing the operation was not made known by its author, and the first account of it sent to England was only from a spectator, considerable doubt and obscurity existed with regard to his precise method of operating. As the original account was communicated to the Royal Society, O'Halloran addressed a paper on the subject to that body in 1752, and this communication he afterwards amplified into a tract entitled, "A Critical Analysis of a new Operation for Cataract." It was published in this city in 1752(*a*). In this treatise he discusses with considerable ability and research the causes of cataract, the means proposed for its removal(*b*), and details a series of experiments which he performed in order to elucidate the subject. He then gives an account of the operation for

been performed by a Mr. Caywood, "*Oculista Dubliniensis*," given by Mr. Samuel Molyneux to the secretary of the Royal Society. In this case the eyes of the patient, a pensioner in the Royal Hospital, were, upon his death, some years after the operation, examined by Sir Thomas Molyneux, and the lenses were found to have been absorbed. The case is alluded to by O'Halloran. Besides those special oculists, ophthalmic operations appear to have been performed here by the general surgeons in the middle of the last century. Thus O'Halloran, in his "*Critical Analysis*," speaking of the success of Daviel's operation for extraction, writes: "In Dublin it bids fair for coming into repute, for my ingenious correspondent and learned friend, Dr. Rutty, informs me that it has been practised with success by Messrs. Dillon and Rooney, surgeons of repute and experience;" and one of these gentlemen invented a seissors with sharp backs, which cut by opening, in order to avoid the contusion and laceration of the cornea.

(*a*) This is, perhaps, one of the scarcest of O'Halloran's works, and for a long time we despaired of its recovery. Our readers will find it, however, bound up with Aitkin's *Principles of Midwifery*, and other "*Medical Tracts*," No. 41, in the library of the Royal College of Surgeons. It consists of thirty-nine pages, and is dedicated to "Edward Barry, Esq., of the College of Physicians, Dublin, Fellow of the Royal Society, and Physician-General to the army;" which dedication shows that the slight passed on O'Halloran's former work by the College of Physicians was not then remembered.

(*b*) To Petit, the surgeon, is generally attributed the merit of having first extracted an opaque crystalline, in 1708, in a case in which it became accidentally dislocated into the anterior chamber during the operation of depression; but O'Halloran shows that the Arabian Physician, Jesus Hali, as well as Arculanus, the Italian commentator, Mayerne, and Freytag, had long previously described the operation, performed in one instance, he says, by a "female oculist, on my Lord Rieh, son to the Earl of Warwick, with success." See *Critical Analysis*, pp. 19 and 20.

extraction, on which, did our space permit, we would willingly enlarge, inasmuch as it was one of the best and most original descriptions of that operation given at the time(*a*). The contusion and subsequent opacity of the cornea, caused by the scissors, militated to a certain degree against the splendid success which must otherwise have attended Daviel's operation, and to avoid which the Limerick oculist proposed to incise "the sclerotica, near or at the border of the cornea transparens," a mode of operating which he subsequently reduced to practice.

In order to follow out this subject we must now pass over thirty-four years of our author's eventful life, when, with matured experience, he presented his last essay upon the eye to the Royal Irish Academy, of which learned body he was elected a member upon its establishment a short time previously. This paper, which was communicated by the President, the Earl of Charlemont, on the 22nd of November, 1788, and was published in the second volume of the Transactions, is entitled, "A Critical and anatomical Examination of the Parts immediately interested in the Operation for a Cataract, with an attempt to render the Operation itself, whether by Depression or Extraction, more certain and successful," is divided into sections, containing, a general review of the subject,—anatomical observations on the structure of the iris, and situation of the crystalline, &c.,—the question of adhering cataracts,—the difficulties attending the operation of depression demonstrated,—and the method of extraction explained; to which are added, engravings of the anatomy of the parts. In it we learn that since the period of his former communication, in 1752, he had reduced to practice the mode of operating which he recommended in the "Critical Analysis." Instead of the scissors employed by Daviel and his followers, the disadvantage of which we have already explained, O'Halloran invented a *knife*, double-edged, and also slightly concave on the flat of the blade. His incision is thus described: "With the concave part next me I pierce the sclerotica very near the edge of the cornea,—suppose the third of a line,—at either the external or internal canthus, according to the eye to be operated upon."—p. 140.

Now, from this extract it might appear that O'Halloran was in the habit of performing extraction through the opaque sclerotica behind the iris, as subsequently practised by Sir James Earle, and revived in modern times by Quadri and Sichel; and we confess that a superficial perusal of the dissertation in the Transactions of the Royal Irish Academy (which is undoubtedly inferior in clearness and perspicuity to any of the author's other writings), might, at first, lead to that opinion. The contrary, however, is the fact. By

(*a*) In the manuscript memoirs of the Medico-Philosophical Society of Dublin, of which we gave an account in the preface to the first Number of the present series of this Journal, we find that at a meeting of that body, held upon the 5th May, 1757, Dr. Nathaniel Barry read part of a letter from Mr. Silvester O'Halloran, a surgeon of Limerick, giving an account of his couching a cataract by the new method of Daviel, with success, &c.

the sclerotica O'Halloran meant that undefined line at the junction of cornea and sclerotica which exists between the perfectly transparent edge of the former and the ciliary ligament and attachment of the iris, which he believed, as already stated, receded considerably upon each side, in the transverse axis of the eye. His incision was a perfectly lateral one, made by two cuts, commenced at the point of the transverse axis, where from the receding of the iris, he believed there was more space, and extended into the transparent cornea. To use his own words, "advancing the incision to the edge of the cornea transparens, as the distance between the iris and sclerotica approaches closer to the cornea the farther you go from the sides of the eye;" and that this must have been a corneal incision is evident from the passage of the instrument being "proved by part of the aqueous humour escaping, and by your seeing its point within the cornea between it and the iris." "Thus," he continues, "nearly one side of the sclerotica (cornea) from top to bottom, at its junction with the cornea, becomes divided; with the point of this very instrument you prick the crystalline capsule, and the smallest inclination of it inside the pupilla will do this; and then gently press on the globe of the eye, the cataract will slip out."—p. 140. La Faye, Warner, and Sharp, had, it is true, previously performed the extraction with a knife, but at a considerable distance within the external border of the cornea, so that extensive opacities were frequently the result.

We have dwelt thus at length upon O'Halloran's operation, because it has been generally overlooked, and because, from the term "sclerotica" having been employed by him, it required some explanation.

Besides his various published works, O'Halloran wrote "A new Philosophical and Medical Treatise on the Air, in two Parts, wherein its real properties are investigated against Toricelli, &c., and Physicks attempted to be settled on more solid and rational Foundation." This is a manuscript quarto of 172 pages, in the library of the Royal Irish Academy. It is divided into chapters and sections, and is written out with considerable care in the handwriting of the author; it does not, however, bear any date upon the title-page, but from the state of the writing in the text, and various additions and marginal notes made to it in the same hand at a later period of life, it would appear to have been written and revised at different times. At the commencement and the conclusion of the volume we find a preface, the former dated in September, 1755, the latter in May, 1756, from which somewhat of its history may be gleaned. He states that when he first commenced the study of physics he "carefully considered every particular part of that unbounded science, and remarked such doubts as appeared. Amongst other parts, the system of the air's gravity, and the supposed weight of air; bodies supported without becoming sensible of it, seemed to me very odd. And when in other places the amazing elasticity which most bodies, and particularly air, were supposed to have, seemed entirely to destroy its gravity, I did not scruple to take down notes of these things, and

now and then make experiments to clear up fresh doubts, till such time as in the year 1749, that I published my new treatise on the cataract; then I found myself quite at liberty to pursue my *first* inquiry. In 1751 I intended publishing it, and actually made some steps towards that; but as I proposed going abroad again for some further improvements in my profession, and particularly in the obstetric art, I thought it more prudent to defer my design for some time longer, and to try at my leisure what further improvements I could make." It then appears to have been prepared for the press with considerable care, and this preface thus concludes: "I flatter myself, however, if I have not completed, I have at least struck out a road for future philosophers, as, if well pursued, will make us truly worthy that name. And if in any place, through inadvertency of design, any expressions may be found which might seem censorious, I hope they will be imputed more to a laudable design for the improvement of real knowledge than to an intent of reflecting on any particular science or persons. And let us often think on that praiseworthy saying of the sage Seneca, 'Puto multos ad sapientiam potuisse pervenire nisi putassent se pervenisse.'—O'H. Limerick, September 20, 1755(a).

He wrote another preface on the 2nd of March, 1756, and a third on the 20th May following, in which he says:

"In the ensuing treatise, though we have attempted to introduce a new system of philosophy, one nearer nature, as being more correspondent with her works than the established one, yet our induction has been only from effects, not by laying down of imaginary principles. The small success that has attended the greatest men in attempts of this nature, and the very little advantages that mankind have gained by such methods of inquiry, should convince us how fruitless it must ever prove. But to explain the method we have pursued: for instance, we have proved that there is through nature a *vis inertia* or sluggishness of matter, so that there must be a force exerted to put matter in motion, and this force must be continued to preserve this motion; that solid bodies must be supported by solider or firmer; and that nature must have certain limits. From this we inferred that the massy body of our globe could not be supported in its motion round the sun by the ether, and that it was really a body fixed and permanent, and that our world was limited by the celum empyreum, or firmament; that as air is a medium absolutely necessary for the distinction of luminous bodies, and that the distance of enlightened bodies considerably augments their diameter, we naturally concluded that the space from the

(a) Upon this front leaf of the volume we find the O'Halloran arms, with an heraldic description of them, thus:

Crest.—A lizard proper.

Arms.—Gules, a horse argent, caparisoned, trotting on a chief argent. Three mullet stars azure, pierced.

Motto.—Ὀσιν γ μαρβαμ. (I wound and kill.)

Name.—Ohallupam. (O'Halloran.)

earth's surface to the celum empyreum was replete with air; that this space could not be very high, and that the stars could not be these monstrous massy orbs, and at so illimitable a distance. In the further pursuits of this system, where we had not nature to conduct us, we have communicated what seems to us most natural, but still as conjecture, but we have not attempted to inquire into first causes. This system has been the consequence of our inquiries into the properties and effects of air, and these inquiries began almost as early as our knowledge of philosophy, for the very experiments shown me to prove the air's gravity incline me to think that they had some other cause. This made me dedicate some time to this inquiry, and become better acquainted with the different writers on this head. The experiments and reasonings on this head which lay scattered, I had collected, and put into some form for publication, in 1751, as presuming they might furnish some useful hints to the curious. But as I intended spending some further time abroad, I considered that I had better opportunities of making new experiments, as well as of perusing many books on this head which are not to be met with but in large libraries. On these accounts I was determined to let it lie some considerable time longer in obscurity, and I found no cause to repent of this delay."

The following are the contents of this work:

" PART I.

" CHAPTER I.—Of the air, its height and gravity, according to the modern acceptance.

" CHAPTER II.—That air (much less heavier bodies) is not porous; that is to say, that one body cannot insinuate itself into the interstices of another without also proportionately increasing the surface of the body pervaded.

" CHAPTER III.—That the levity and subtilty of certain bodies (the air for instance), so far from being the cause of their pervading heavier bodies, will be their greatest obstacle; in which the phenomena of the diving-bell and the detonation of gunpowder will be occasionally considered.

" CHAPTER IV.—Showing the true cause of the suspension of liquors in cylindrical tubes, with remarks on thermometers.

" CHAPTER V.—That air is a body perfectly homogeneous, neither generated nor corruptible, but to have existed from the beginning; with remarks on other bodies.

" CHAPTER VI.—Proposes from the foregoing a new cosmogony.

" CHAPTER VII.—The system of Copernicus and Galileo examined, and the advantages of the preceding one further illustrated.

" PART II.

" CHAPTER I.—A description of the air, its real height, gravity, and colour.

" CHAPTER II.—Of the contractile and dilatative force of air, with remarks on elasticity, heat, and cold, &c.

" CHAPTER III.—Of respiration.

" CHAPTER IV.—Of epidemic disorders, and how far the air really contributes towards them.

" CHAPTER V.—Of winds.

" CHAPTER VI.—Of the seeds of insects supposed to be lodged in the air.

" CHAPTER VII.—Shows the cause of the blood's fluidity, and explains other phenomena which depend on it.

" CHAPTER VIII.—Treats of salutary and unwholesome air."

This work exhibits a vast amount of learning and great depth of research. The four last chapters of the second part are well worthy the attention of those engaged in the investigation of the subjects on which they treat(*a*).

In the "Repository" of the Medico-Philosophical Society, preserved in the Royal Irish Academy, we find a letter of O'Halloran's, dated June, 1762, directed to Mr. Cleghorn, giving an account of a monstrous fœtus, in which the abdominal viscera were contained in a large cyst attached to the abdominal parietes at the seat of the umbilicus.

To our friend, Dr. Thomas Wright, we are indebted for the use of a collection of manuscripts in the handwriting of O'Halloran. These consist of a memoir upon "hydrocephalus from an external injury, with remarks on hydrocephali in general," written in 1781; also a "selection of a few anomalous cases of midwifery," to which there is no date, but from the notes of the cases it is evident that it was written subsequent to 1773; and three letters addressed to the distinguished William Dease, in 1786, from which it would appear that the essays enumerated above were sent, through Mr. Dease, for publication, to the Royal College of Surgeons. In that dated 22nd April he says: "My absence in the county of Tipperary for some days will, I hope, plead my excuse for not acknowledging your esteemed favour of the 8th inst. sooner. I am much pleased that the cases I sent

(*a*) In the fourth chapter of this part O'Halloran states that "the winter of 1674 was remarkably warm and mild, with scarce any rain in Ireland, which made people fear that the following season would be a very fatal one; but the succeeding harvest was remarkably good, and universal good health reigned all over the kingdom, and the notion of plagues being produced by an infected air is deemed by that learned gentleman Dr. Molyneux of Dublin, for a very vulgar error."—See also Molyneux's Paper in the Phil. Trans. p. 1694; and biographical memoir of him in Dublin University Magazine for 1841.

O'Halloran rather inclined to the opinion that the "effluent cause of epidemic disease was not in the air; but unwholesome diet, a scarcity of it, or an immediate alteration of our accustomed manner of living, certainly produce diseases; for it appears by what has been said in the last section, that let the alteration of the seasons be ever so unnatural, provided that provisions of all kinds are plenty, we need apprehend no bad consequences from the change of weather. We shall still make this assertion clearer by examining the great mortality that happened all over Ireland in the year 1740. In the beginning of November, 1739, we had a very sharp, cold, northern wind, and which continued for almost three weeks; this was succeeded by the severest frost known here in the memory of man, *which wholly destroyed the potatoes*, the chief support of the poor, and provisions of all sorts became excessive dear, and they would have perished for want but for the generous and bountiful contributions of the public. About the beginning of March, when the frost began to abate and business became brisk, they fell into a better and wholesomer diet, but the juices made from their former hard fare ill agreeing with a wholesome and more nutritious chyle, produced many gripes and dysenteries, which swept off numbers of people. But as the summer following, which was remarkably warm, advanced, the remains of this leaven turned out into violent fevers equally fatal."

met with your approbation, and that the College approved of my endeavours to second their views, so honourable, I hope, to our country, and so useful to mankind. I should be glad to know if they were handed over to Mr. Henthorn for publication. If so, accept of the following as a codicil to them." At a future period we hope to insert these various communications at length in our Medical Miscellany, but here they would occupy more space than we could devote to the subject. The insertion of the following extract from the letter of the 2nd June, will, we feel, be acceptable: "You apologize for not writing earlier as wishing to lay my papers before the College before that period. I am highly sensible, my dear Mr. Dease, of your friendship and predilection for me, and this even before I had the pleasure of a personal acquaintance with you. I have been well informed that, through your solicitation, I was admitted an Honorary Member of the Chirurgical Society, with my esteemed friend Mr. Adair.(a) I have a letter of the secretary's, informing me that they waited for a Royal Charter before they would make any publications; and I as naturally concluded, when this event took place, that I was as much a member of the new society as of the old. There is an old adage, *qui cito dat, bis dat*. As the smallest demur has taken place, it becomes no longer an object worth consideration by me. Being a member of all the literary societies in Europe will not add a single iota to a man's real merits; but such societies reflect honour to themselves, when they embellish their catalogue with meritorious and illustrious names. This little stricture is, my dear Sir, reserved for your own perusal. I have not seen John Hunter's work, but know that it has been advertised in the English papers above a month. I know him personally, and have seen him operate at St. George's, where my friend Bromfield attends. As I lodged in Parliament-street, when last in London about my History, I had frequent cards from some hospitals, particularly St. George's, whenever operations took place. Hunter's character is respectable, and his collections much esteemed; but, considering his confined and narrow education, I should expect nothing very remarkable from

(a) This allusion to a Chirurgical Society again brings us back to the state of the surgical profession in Ireland at the period specified. So early as the beginning of the year 1780, the principal surgeons in Dublin, feeling the disadvantages of their legal and corporate connexions with the barbers, formed themselves into a society called "The Dublin Society of Surgeons," which met once a month at a tavern, for the purpose of transacting business. The minute book, containing the rules and regulations of this body, is still in existence in the College of Surgeons. It was the intention of this body to publish transactions, and the MSS. of O'Halloran, alluded to in the text, appear to have been forwarded to Mr. Dease for that purpose. Both Silvester O'Halloran, and Robert Adair, of London were elected Honorary Members of this body. It was the "Dublin Society of Surgeons" which procured the charter of George the Third, and achieved the incorporation of the Royal College of Surgeons in Ireland four years subsequently. Henry Morris was President of the Society, and the names of its members are all enumerated in the first section of the early charter of the College.

him: *however, I should suspend my judgment.* You conclude your letter with an offer of your services; I accept of this offer with the same candour I would give it. I told you that I had left in town a treatise on injuries on the head, which was to have been published in eleven weeks. I had entered into a written agreement with a Mr. Whitestone,—who, I believe, is nobody; at least, I am sure with respect to me he is devoid of truth. He had long amused me, but upon inquiry I found he never committed the work to press. Whether he made any indirect use of my manuscript, or had a copy made out for his own purpose remains to be explored; but the manuscripts I have got out of his hands. Well acquainted with booksellers, and in general with their not being ‘righteous overmuch,’ I wish to make it the interest of one of them to engage in the present, as I did Ewing some years since, but Whitestone is not the man.”

From the memoir supplied us by Dr. Kidd we quote the following account of his other professional work:

“Among O’Halloran’s succeeding literary performances we find a Complete Treatise on Gangrene and Sphacelus, with a new Mode of Amputation, published in 1765, which is, perhaps, one of the scarcest of his works at present.

“He attributes gangrene to a ‘vitiation of the humours,’ and a ‘want of the balsamic and nutritive properties of the blood;’ recommends surgeons not to be too hasty in amputating, but to wait till the case is at its last, instead of the indiscriminate practice of amputating the moment gangrene is suspected; advances many forcible arguments to support his position, and several good recoveries in his own and others’ practice; advises a discontinuance of the practice of making incisions in mortified parts, and recommends bark and wine. He also enters at very considerable length into all the varieties of the disease, and divides mortification into three classes: *gangrene*, *sphacelus*, and *esthiomene*, or the highest degree, from which recovery is impossible.

“The second part of the work, on Amputation, is, perhaps, not as orthodox as that on Mortification; it is referred to, however, in Thompson’s very valuable lectures on the subject, and again by the Coopers. The history of amputation, however, previous to the time that O’Halloran wrote, throws considerable light on the subject; for when one considers the number of different, and not unfrequently opposite opinions, that distinguished the earlier advances of surgery, it is not, perhaps, to be wondered at that O’Halloran, as he does here, should propose such a thing as to defer laying down the flaps of the wound till the end of the first ten days! Ambrose Parè, and after him Dionis, had ventured, it is true, on the ‘fearful’ innovation of tying the arteries in place of the actual cautery; many surgeons, among others Baronius, in the seventeenth century, still preferring to err with Galen than go right with the illustrious Frenchman. Wiseman, a century after, insisted on the ligature, and the necessity of drawing the flaps over the stump, and either

fastening them with stitches or a light bandage; the wound at this time being invariably a large, suppurating one, healing very slowly, the ends of the bones, of course, projecting and perishing: indeed, at this time it was thought impossible to heal a stump before the bone had exfoliated. Yonge was perhaps the first, in an obscure production, termed *Currus Triumphalis e Terebintho* (of all places in the world to look for such a thing!), that offered a hint of curing the wound ‘*per symphisin* in three weeks,’ without fouling or scaling the bone. Even Larrey himself, with all the best surgeons of his time, were in the habit of introducing *charpie* under the flap to prevent union by the first intention.

“At this time appeared O’Halloran’s book, which seemed something like the advice given to Phaeton reduced to surgery, *in medio tutissimus ibis*. A very general dogma prevailed,—quite a maxim, in fact,—that when the fresh-cut flap was laid over the end of the bone, inflammation and abscess were inevitable. O’Halloran recommended to defer laying down the flap till the danger of inflammation was over; in the mean time to dress the flap and stump as *distinct* surfaces, to preserve their power of uniting *per symphisin*. He performed the operation several times! and even states that after ten or twelve days the edges of the wound have united together very quickly.

“‘To most men,’ in the fine figure of Coleridge, ‘experience seems like the stern-lights of a ship, which illumine but the track it has passed.’ This cannot be said of the subject of our memoir; he evidently thought for himself, but, in the subject under our present consideration, with less happy effect than in those previously alluded to. Here, indeed, ancient dogmas and prejudices were against him, and his reasoning led him but half-way out of the ancients’ track into still greater darkness and obscurity.

“His next professional work, entitled, ‘An Attempt to determine with Precision such Injuries of the Head as necessarily require the Operation of the Trephine,’ was printed in the Transactions of the Royal Irish Academy, in 1791. As he subsequently published ‘A new Treatise on the different Disorders arising from external Injuries of the Head,’ which embodied these observations, we shall consider them both together. They were written at a time when Mr. Pott (the only respectable authority on the subject at the period) complained of the darkness and obscurity of this part of surgery. Enabled, however, by close and diligent observation, and extensive practice for thirty years, during which, on an average, we have been told, he used to boast of three fractures every week, the result of party-fights in several of the southern districts, he set about to determine the question proposed in his paper published by the Academy, perhaps the nicest and most involved in surgery: at a time, too, when the French Academy directed the *trepan*, or *trephine*, in all cases of fractured skull indiscriminately, on the more than questionable principle, ‘*Veniente occurite morbo*,’—and when Pott, from whose opinion there seemed to be no appeal, countenanced the same ruinous

mode of proceeding. Our own Dease, however, had commenced the good work of reformation in 1778.

“Abernethy, I need scarcely say, exposed the error of Pott’s practice in a very masterly manner; but it is only a matter of justice to O’Halloran to state that he was one of the first who broke through the dogmatism of Pott and his friends of the Academy: ‘Non fingendum, aut excogitandum, sed inveniendum, quid natura faciat ante ferat,’ are the memorable words of Bacon, which he himself uses. ‘To point out with perspicuity and precision the cases in which it (the trephine) can be useful to the patient, is the object of this Paper,’ says O’Halloran; ‘long experience having convinced me that many fractures require no operation.’ Abernethy, exactly twenty years after (1811), for which he gets a world of credit, acquainting us of the French practice being so very faulty, and that of Mr. Pott, ‘who advised the operation *invariably*, to prevent the inflammation and suppuration he so much apprehended,’—‘many cases having occurred of late,’ says Abernethy, ‘where, even in fractures with depression, the patients have done well without an operation;’ but no allusion whatever is made to the subject of our memoir, who had told the world the great fact long before.

“When we recollect, indeed, that after O’Halloran came Desault, and Schmucker, and Abernethy, and Larrey, and the great Sir Astley, it is but fair to assign O’Halloran that distinguished place among these men to which his labours so eminently entitle him. Indeed, reading this Essay, one is at a loss which to admire most, the masterly style in which it is written, or the crowd of facts he adduces to support his views. After a few preliminary observations relevant to the subject, he begins by citing a number of cases in which the fracture, contrary to the ordinary practice of the time, did not require the trephine; these are followed by some excellent practical remarks, and a second series of cases, many of them apparently less grave than the previous ones, yet where the proper use of the instrument saved the life of the patient. We find him urging at the same time, with no little force and reason, that the *symptoms* were to be the guide, not any axiomatic rule or law of any sort; in point of fact, the advice of the best surgeons at the present hour.

“He also takes up the consideration of the subject, whether the trephine should not be used in all cases of manifest *depression*. Some cases are given, not unlike many of those in the work of Klein (*Chirurgische Bemerkungen*), his opinion being that, under such circumstances, ‘no consideration should make the surgeon decline or procrastinate’ the operation.

“The concluding part of the Essay being taken up with the subject of ‘Concussion of the Brain,’ generally supposed to require the trephine, which, however, he opposes, notwithstanding the advocacy of Mr. Pott and Dionis, a writer of the previous century,—O’Halloran, laying down the then new but very sound rule, that concussion of the brain, characterized by *immediate* stupor and insensibility, does

not require the trephine unless accompanied with evident depression of the skull, or extravasation, neither of which produces bad symptoms for *some time after* the accident which has given rise to them.

“ Among his other remarkable achievements, O’Halloran, we may say, was the founder of the County Limerick Infirmary. An old lady, yet alive, recollects distinctly his renting three or four houses, which he threw into one, for the reception of the sick and maimed, all his ingenuity and address being scarcely equal to the task of keeping it open. He was associated, it seems, with a gentleman named Vandeleur, who was also a surgeon. As subscriptions increased the beds were multiplied, and the benefit to the public was soon found to be so great, that further means were taken to extend the usefulness of the charity, a new building having been erected. This happening to be in the county, and an Act of Parliament having been just passed while it was in progress, for the support of such institutions, it was called the ‘County Infirmary,’ to enable it to come within the requirements of the Act. We have been curious enough to look into some of the earliest books connected with this institution, preserved with wonderful care and accuracy, and find the name, as given under the accompanying engraving, signed to almost every meeting of the Committee; O’Halloran himself being generally in the chair, or taking a very active part in the business of the meeting, as betrayed in several instances by his handwriting. About this time, the local history tells us, that Whiteboys first made their appearance in the south, and with them party-fights of every shade and character, so that the Infirmary soon became a sort of *sine qua non*, quite as necessary as the gaol, of which at present it seems but the outer porch. I may, however, add, that the building formed into an hospital by O’Halloran is not that now in use for this purpose.

“ A strange mixture of industry and carelessness, O’Halloran is yet remembered by all the old people in Limerick, as a man of wonderful ability, with, at this period of his career, but little practice outside the walls of the Infirmary; his entire time nearly given up to literature and the discovery of antiquities. His house is yet in existence, in the old, but by far the most interesting part of the city, the resort of all the foreigners and *literateurs* that happened to visit this part of the country at the time. The tall, thin doctor, in his quaint French dress, with his gold-headed cane, beautiful Parisian wig, and cocked hat, turning out every day very responsibly to visit his patients,—visits, as he described them himself, that partook too much, according to his taste, ‘of the nature of those of angels.’ Among his other recommendations, an old friend of his has told me, that he valued that one lauded in the Gospel, ‘being given to hospitality.’ This gentleman having often dined with him, particularly the day he was elected an honorary member of the College of Surgeons, when, at a late hour of the evening, the ‘Health’ of the College was drunk by the Doctor, with a capital speech and a crowd of fine compliments.

“ At some meeting of this sort, a story is told of his falling out with some one,—a gentleman ever boasting of his bravery, but withal a most arrant coward, something like a person he speaks of in his history(*a*). The Doctor challenged him, but next day the gentleman felt considerably like Bob Acres, and sent the most abject apology, accompanied even with a stipulation that, if O'Halloran pleased, he would allow him to horsewhip him in the public room,—anything rather than fight. O'Halloran consulted his friends, who seemed unanimous that he should give this person a threshing. ‘Look’ee, Sir Lucius, there’s no occasion at all for me to fight,’ says Bob Acres: ‘when it comes to the point, if it is the same to you, I’d as lieve let it alone.’ So thought this foolish braggart. O'Halloran, however, was in the hands of his friends, and he was obliged to conform to their directions. The morning arrived; the room was crowded with people, anxious to see the gentleman paid off. O'Halloran, with his cocked hat and ruffles, arrived, and, to the great satisfaction of every one present, was quite as good as his word, as he laid on in the most unmerciful manner. This at once brought him into notice,—indeed, did more for him than if he had just discovered the circulation of the blood. Such the caprice of the time, and such the qualification for a Munster surgeon in 1770.”

Having thus enumerated his several medical and scientific productions, it now but remains briefly to notice his various literary and antiquarian labours; we say briefly, because, however inviting the subject, it is less suited to the pages of a purely professional periodical than those labours to which we have devoted the previous portion of this essay. Whatever opinion may now exist with regard to O'Halloran's historical researches, it should always be borne in mind, that he was one of the few modern historians in this country who possessed the power of reading our Irish manuscripts. His first essay in this department of literature was the “*Insula Sacra*,” a small work, apparently printed for the purpose of preserving our ancient Annals(*b*); and a more worthy theme could not possibly have engaged an Irish antiquary's attention towards the close of the last century.

Two years afterwards appeared his *Introduction to the Study of Irish Antiquities*, a work of great erudition and research, and rather in advance of than behind the knowledge of its time, but imbued in many parts with the fanciful theories which are set forth at length

(*a*) “ This story is too good to be lost. We recommend it to the readers of Michelet, always talking of the characters of the *Bourgeoisie*. The prince of Saxe Hilburghausen, a desperate braggart, one day descanting on the high antiquity of his house,—that his ancestors were dukes and so-forth in the reign of Charlemagne,—General O'Donnell, an Irishman, descended from the people, coolly answered: ‘*Mon Prince vous etez bien heureux d'avance etir né en Allemagne. Si vous etiez chez moi a peinc duriez vous le droit de bourgeois !*’ ”

(*b*) This little work, which was printed in Limerick in 1770, is the only one of his writings not now before us. It is enumerated by Ferrar.

by Dr. Ledwich(*a*). To this work, some animadversions upon Mac Pherson's History of Great Britain and Ireland, and remarks upon Sir John Dalrymple's Memoirs on the same subject, were appended. This is the work to which the author refers in his letter to Mr. Dease, given at page 19, when speaking of Ewing, the bookseller, by whom it was published. The work appears to have been completed in October, 1771.

In 1774 O'Halloran published his "Ierene Defended," which was written to refute certain passages in Dr. Leland's and Mr. Whitaker's works, which seemed to affect the validity and authenticity of ancient Irish history. This is a quarto tract of thirty-six pages, addressed in the form of a letter to Sir Lucius O'Brien, Bart., the President of the Antiquarian Society, which then existed in the city, and some of the records of which are still preserved in the Royal Irish Academy(*b*).

"To follow this able writer in chronological order," continues Dr. Kidd, in his memoir, from which we have already quoted, "we should be led into the attractive but somewhat discursive field of Irish literature, in which were spent the latter part of his intellectual labours. Distinguished by no ordinary talent, and an erudition that investigated every variety of Irish subject, O'Halloran's name was well known all over the Continent; indeed, as he often expressed it to some of his still surviving friends, he was 'never more at home than when abroad.'"

"In Limerick, a literary society, composed almost exclusively of medical men, if not founded, was chiefly supported by his labours. At his death, however, it was dissolved, and I have not been able to discover its records, or any traces of its former existence. Two other old practitioners, now no more, Dr. Hardinge and Dr. Grogan, and an intellectual old gentleman named Hogan, were no insignificant pillars of this establishment(*c*). His General History of Ireland, however, during the latter period of his life, engrossed his chief attention. This appeared originally in two quarto volumes in London,

(*a*) At page 204 of this work we find a most interesting and learned dissertation upon the mineral riches of Ireland, which he appears to have written as a censure upon Dr. Gerard Boate's assertion, in his Natural History, that all the mines known in Ireland were "discovered by the New English, that is, such of them as came here in and since the days of Queen Elizabeth." Our space will not permit us entering at length upon this subject, nor is it one that requires to be discussed at the present day; but we would recommend the perusal of this chapter to those engaged in describing the resources of Ireland.

(*b*) The Antiquarian was a section of the Royal Dublin Society. O'Halloran was one of the committee.

(*c*) See the Editor's preface to the first Number of the present series of this periodical, p. 31; see also the *Anthologia Hibernica*, vol. iii. p. 251, for April, 1794, in which we find an article by Silvester O'Halloran, M. R. I. A., Honorary Member of the "Physico-Surgical Society," being "an attempt to ascertain with some degree of precision the question relative to vacuum and plenum, read at the Limerick Literary Society, June 2nd, 1792."

in 1778. His Introduction to the Antiquities had spread over the Continent in every direction; and he informs us, that it was everywhere received with approbation,—compliments of a very flattering nature having been received by him from some of the most distinguished characters in France and Italy; and in 1778, he says, “so great had the demand for it become, that three hundred copies were obliged to be shipped for Madrid, besides an immense quantity for India, Italy, and France.”

“In what light this work might be considered in his own country, he seemed at a loss to conceive, but comforts himself with the assurance, which we cannot but admire for its candour: ‘I am sensible,’ says he, ‘that men reluctantly part with their prejudices and their opinions; and the latter periods of our history have been so shamefully misrepresented, that it will require some time to establish antecedent facts. But let it be considered in what light it may, my intentions fortify me against the event.’ When preparing his History for the press, we know that he enjoyed almost the entire surgical practice of this city, and his time was entirely occupied between it and the reading and deciphering old Irish manuscripts, of which he possessed a large collection. ‘Though few people possess a greater affection and veneration for their native country, I little thought,’ he says, in the Introduction to his General History, ‘that this would, one day or another, engage me to draw my pen in its defence. It appeared to me, that if some generous attempt at a general history was not speedily undertaken, the Annals of our country, so important to letters, would be for ever lost. Could I have foreseen the tenth part of the labours and difficulties I had to encounter, in all probability it would never have appeared.’ To us, writing at this distance of time, it seems almost incredible how O’Halloran could have written his history in a place like Limerick, where, even at the present moment, there is not one literary or philosophical society of any account. He had, however, himself transcribed some valuable Gaelic manuscripts in the Irish College at Paris, and he obtained several others by advertising in the Dublin newspapers of the time(*a*).

(*a*) O’Halloran’s General History is now but little referred to, as the most valuable and accurate portions of it are to be found in Colgan and O’Flaherty. It is distinguished throughout by great national enthusiasm and considerable erudition, but its topographical descriptions, though on the whole tolerably correct, have been in many instances revised and altered by modern investigators. With the accurate dissertations of Dr. Petrie, Mr. O’Donovan, Mr. Hardiman, and Mr. Curry, with the Transactions of our Academy, the Annals of the Four Masters, and the Tracts of the Archæological and Celtic Societies, it will, no doubt, lose by the comparison;—still it was an astonishing performance at the date of its publication; for by it, to quote the concluding paragraph of his second volume, “the Irish of modern days have an opportunity of renewing their acquaintance with their great, their long-neglected ancestors, and I am persuaded that neither they nor their country will be worse for this information.” O’Halloran’s Irish History is still well known on the Continent, and it is, we believe, the only one which has been translated into German.

“Silvester O’Halloran was married at rather an early period of life, and had three sons and one daughter, all now dead: one of his sons died in mere boyhood. One son, General Sir Joseph O’Halloran, K. C. B., served in the East India Company’s service for upwards of fifty years with distinguished merit(*a*). Another son died while occupying some high military appointment in the West Indies. The Doctor seemed to have early imbibed a favourable impression towards a military life, and one of his oldest living acquaintances lately informed me, that, while residing in London, in 1745, he entertained serious notions of joining Charles Edward, then in the zenith of his progress through Scotland. He died at a very advanced age, in the early part of the present century, and was buried in the little churchyard of Killeely, near this city, beneath a tombstone on which he had himself caused to be engraved a Latin inscription recording the virtues of his wife and daughter; but no friendly hand has added a line to record the labours and genius of this most distinguished Irishman.”

In Miss Brooke’s preface to the “Relics of ancient Irish Poetry,” published in 1788, she says that she is greatly indebted to the learning of Silvester O’Halloran for much of the information contained in that work. It was not unusual, even at the time that O’Halloran wrote, for poems to be addressed by bards and poetasters to distinguished medical practitioners(*b*); and an Irish poem of this nature was addressed to the subject of this memoir by Thomas Meehan, a Clare poet of some note, and one of the last of the rhymers, towards the close of the last century. It is preserved in the Royal Irish Academy, and we are indebted to our learned friend, Mr. Curry, for a translation of it.

The following is a list of works published by O’Halloran, as well as the Papers communicated by him to the Transactions of learned societies:

“A new Treatise on the Glaucoma, or Cataract. By Sylvester O’Halloran, of Limerick, Surgeon. Dublin: printed by S. Powell, Crane-lane. 1750.” Plates. 8vo. pp. 115. This work was concluded upon the 12th April, 1749. It is dedicated to the celebrated Dr. Meade.

“A Critical Analysis of the new Operation for a Cataract.” Dublin: Powell. 1755. 8vo. pp. 39.

“A complete Treatise on Gangrene and Sphacelus, with a new Method of Amputation. By Mr. O’Halloran, Surgeon. Limerick:

(*a*) Our friend Charles P. M’Donnell, Esq., has just placed in our hands the following extract of a letter received last year: “The late Lieutenant General Sir Joseph O’Halloran was married to an aunt of the present Marquis of Anglesey; he served fifty years in India, and was a most distinguished officer; he was a tall, thin, soldier-like looking man, and very amiable. He died in London about five years ago, aged eighty years, but in mind and appearance he seemed thirty years younger.”

(*b*) A most curious collection of these poems will be found in Peter Lowe’s “Discourse of the whole Art of Chyrurgerie,” printed in 1612.

printed by A. Welsh, for the Author." 1765. 8vo. pp. 289. This book was originally published by subscription, and dedicated to the Earl of Hertford, then Lord Lieutenant of Ireland. It was reprinted in London by Vaillant the same year.

"Insula Sacra, or the general Utilities arising from some permanent Foundation for the Preservation of our ancient Annals demonstrated, and the Means pointed out." Limerick. 1770.

"An Introduction to the Study of the Antiquities of Ireland, in which the Assertions of Mr. Hume and other Writers are occasionally considered. Illustrated with Copper-plates. Also, two Appendices containing: 1. Animadversions on an Introduction to the History of Great Britain and Ireland, by J. Mac Pherson, Esq. 2. Observations on the Memoirs of Great Britain and Ireland, by Sir John Dalrymple.—By Sylvester O'Halloran." Dublin: printed by Thomas Ewing, in Capel-street. 1772. 4to. pp. 384.

"Ierne Defended, or a candid Refutation of such Passages, in the Rev. Dr. Leland's and the Rev. Dr. Whittaker's Works, as seem to affect the Authenticity and Validity of ancient Irish History. In a Letter to the Antiquarian Society." Dublin: Ewing. 4to. pp. 36. 1774.

"A General History of Ireland, from the earliest Accounts to the Close of the Twelfth Century, collected from the most authentic Records, in which new and interesting Lights are thrown on the remote Histories of other Nations, as well as of both Britains. By Mr. O'Halloran. London, 1774: printed for the Author by A. Hamilton; and sold by G. Robinson, J. Murray, and J. Robson, and in Dublin, by Messrs. Faulkener, Hoey, and Wilson." 2 vols. 4to. —Vol. i. pp. 307; vol. ii. pp. 416. This work is dedicated to Murrrough O'Brien, Earl of Inchiquin, and was published by subscription. The subscription list exhibits the names of a great number of Irish gentlemen, then resident abroad, and chiefly in foreign service. O'Halloran's Introduction and History were republished in 3 vols. 8vo. by Fitzpatrick, Dublin, 1803. This is the edition quoted by Michelet, in his *Histoire de France*, liv. i. chap. 4.

Another edition, in 3 vols. 8vo., was also published in Dublin, 1819, by Christie. A fourth edition was published in Cork.

"A Dissertation on the ancient Arms of Ireland." Originally sent to the Irish Antiquarian Society, and published in the 1st Volume of the *Anthologia Hibernica* for 1793.

"Sylvester O'Halloran, M. R. I. A., Surgeon to the County of Limerick Hospital, his Critical and Anatomical Examination of the Parts immediately interested in the Operation for Cataract; with an Attempt to render the Operation itself, whether by Depression or Extraction, more certain and successful. With a Plate." This paper was read before the Royal Irish Academy on the 2nd November, 1788, and is printed in the 2nd Volume of the Transactions of that body, pp. 121 to 141. Index, p. 63.

"Sylvester O'Halloran, &c., his Communication of the original Martial Ode which was sung at the Battle of Cruha (in 155), by

Fergus, Son of Finn, and addressed to Goll, the Son of Morna; with a literal Translation and Notes." Published in the Transactions of the Royal Irish Academy. Antiquities, pp. 7 to 17. Index, p. 63.

"Sylvester O'Halloran(*a*), &c., his Attempt to determine, with Precision, such Injuries of the Head as necessarily require the Operation of the Trephine." Transactions of the Royal Irish Academy, vol. iv. Science, pp. 151 to 169. Index, p. 64.

"A new Treatise on the different Disorders arising from External injuries of the Head; illustrated by eighty-five (selected from above 1500) practical Cases. By Mr. O'Halloran, M. R. I. A., Honorary Member of the Royal College of Surgeons in Ireland, and of the Physico-Chirurgical Society, and Surgeon to the County Limerick Hospital. Dublin, 1793: printed by Zachariah Jackson, for W. Gilbert, Great George's-street." 8vo. pp. 335.

"A Philosophical and Medical Treatise on the Air, in two Parts, wherein its real Properties are investigated, against Toricelli, &c.; and Physicks attempted to be settled on more solid and rational Foundation. By Mr. O'Halloran, of Limerick, Author of a New Treatise on the Cataract." This is a thick quarto manuscript, of 172 pages, closely and legibly written, in the Library of the Royal Irish Academy, to which institution it appears it was presented by the Author.

Mr. Ferrar informs us in his History of Limerick, that O'Halloran was also the author of "A Comedy and a Farce, not published, with several essays, medical, historical, and political, in the magazines, &c.; in all of which he not only appears skilful in his profession, but learned in the Irish language and ancient laws, and a warm advocate for the honour and interests of his native country."

(*a*) In most of his printed works the Christian name is spelled with a *y*; but in writing he always spelled it with an *i*.

THE
DUBLIN QUARTERLY JOURNAL
OF
MEDICAL SCIENCE.

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BOOKS AND PERIODICALS RECEIVED.

1. Scriptural Authority for the Mitigation of the Pains of Labour by Chloroform and other Anæsthetic Agents. By Protheroe Smith, M. D., Member of the Royal College of Physicians. London: Highley, 1848. pp. 52.

2. Eighth Annual Report of the Registrar-General of Births and Marriages in England. Presented to both Houses of Parliament. London: Clowes and Sons. Fol. 1848.

3. Contributions to the Pathology of the Kidney. By William T. Gairdiner, M. D. Edinburgh: Sutherland and Knox, 1848. Pamphlet.

4. Oratio ex Harveii Instituto in Ædibus Collegi Regalis Medicorum Habita. Die Junii, 1848. A Francisoe Hawkins, M. D. London: prostat apud Johannem Churchill, MDCCCXLVIII. Quarto, pp. 27.

5. Arguments against the indiscriminate Use of Chloroform in Midwifery. By S. William J. Merriman, M. D., Cantab., Licentiate of the Royal College of Physicians, &c. London: Churchill, 1848.

6. Metropolitan Sanitary Committee. Third Report of the Commissioners. Presented to both Houses of Parliament. London: Clowes and Sons, 1848.

7. Maunders's Treasury of Zoology.

8. Continental Travel; with an Appendix on the Influence of Climate, the remedial Advantage of Travelling, &c. By Edwin Lee, Esq. London: Adams, 1848. 8vo. pp. 353.

9. Cyclopædia of Anatomy and Physiology. Parts XXXII., XXXIII.

10. A Treatise on the Advantages and Necessity of frequent Bathing, as a Means of Health and a Preventative of Disease, &c. By Edward Perry. Wolverhampton: Price and Williams. London: Simpkin, Marshall, and Co., 1848. pp. 40.

11. On the Employment of Chloroform in Dental Surgery, its Mode of Exhibition, &c. By Francis Brodie Imlach, Dentist, Licentiate of the Royal College of Surgeons, &c. Edinburgh: Sutherland and Knox. London: Simpkin, Marshall, and Co. Pamphlet.

12. School Chemistry, or Practical Rudiments of the Science. By Robert Dundas Thompson, Master in Surgery of the University of Glasgow, Lecturer on Chemistry in the same University, &c. London: Longmans. 12mo. pp. 232.

13. A Few Thoughts on Cholera, in reference to the Origin, the Nature of the exciting Cause, and the Principle of Treatment. By Michael Thomas Sadler, Member of the Royal College of Surgeons. London: Longmans, 1848, pp. 11.

14. Die Spitalsreform, Von Dr. Carl Sigmund. Vienna. Quarto, pp. 16.

15. The British Journal of Homœopathy, No. XXVI. London: Highley. pp. 576.

16. Reports on the Solution of Chloride of Zinc, &c. London. Pamphlet, pp. 28.

17. The Student's Clinical Memorandum Book, &c. London: Highley.

18. Register of Cases professionally arranged. London: Smith.

19. The Periodoscope, with its Application to Obstetric Calculations and the Periodicities of Sex. By W. Tyler Smith, M.B., &c. London: Churchill. 8vo. pp. 47.

20. The Medical Practitioner's Private Register of Midwifery Cases.

21. Principles of Medicine, comprising general Pathology and Therapeutics, and a brief general View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By Charles J. B. Williams, M.D., F.R.S., &c. Second edition, considerably enlarged. London: Churchill, 1848. 1 vol. 8vo. pp. 533.

22. A Treatise on the Practice of Medicine. By George B. Wood, M.D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania. Philadelphia: Grigg, Elliot, and Co., 1847. 2 vols. 8vo., pp. 791 and 840.

23. A Dictionary of Practical Medicine. By James Copland, M.D., &c. London: Longman, 1848. Part XIII., "*Poisons*" to "*Rabies*."

24. Remarks and Observations on the Cholera at present epidemic in Berlin. By J. Lamprey, Esq. London: Simpkin and Co. Pamphlet, pp. 56.

25. Anæsthetic Midwifery. Report on its early History and Progress. By J. Y. Simpson, M.D., Professor of Midwifery in the University of Edinburgh. Edinburgh: Sutherland and Knox, 1848. Pamphlet, 8vo. pp. 54.

26. Observations on Hospital Gangrene, with reference chiefly to the Disease as it appeared in the British Army during the late War in the Peninsula, with Prefatory Remarks; to which are appended Cases showing how extensively applicable the Antiphlogistic Treatment is to other Diseases of the Army. By John Boggie, M. D., Surgeon to Her Majesty's Forces. Edinburgh: Sutherland and Knox, 1848. 8vo. pp. 151.

27. Lectures on the Diseases of Infancy and Childhood. By Charles West, M. D., &c., Lecturer on Midwifery at St. Bartholomew's Hospital. London: Longmans, 1848. 8vo. pp. 488.

28. Bulletin General de Thérapeutique Médicale et Chirurgicale. Tome Trente-Quatrième. Par E. Delont Dele, Redacteur en chef. Paris: 1848. 8°. pp. 560.

29. Clinical Lectures on the Practice of Medicine. By Robert J. Graves, M. D., M. R. I. A., &c. Second Edition. Edited by J. Moore Neligan, M. D., M. R. I. A., &c. In two volumes. Dublin: Fannin and Co., 1848. pp. 586 and 570.

30. On Femoral Rupture; its Anatomy, Pathology, and Surgery. With a new Mode of Operating applicable to Cases of Strangulated Herniæ generally. With Plates. By John Gay, F. R. C. S. E., Surgeon to the Royal Free Hospital. London: Highley, 1848. 4to. pp. 97.

31. The Journal of Psychological Medicine and Mental Pathology. Edited by Forbes Winslow, M. D. No. IV., October 1, 1848. London: Churchill.

32. The Ethnological Journal, &c. No. IV., for September, 1848.

33. Handbook of Physiology. By W. Stenhouse Kirkes, M. D., assisted by James Paget, F. R. C. S. E. With Illustrations on Steel and Wood. London: Taylor, Warton, and Co. 12mo. pp. 705.

BOOKS AND PERIODICALS WITH WHICH THE DUBLIN QUARTERLY JOURNAL IS EXCHANGED.

1. The British and Foreign Medico-Chirurgical Review and Journal of Practical Medicine. London: Highley. (Recd. No. for October, 1848.)

2. The Edinburgh Medical and Surgical Journal; exhibiting a concise View of the latest and most important Discoveries in Medicine, Surgery, and Pharmacy. Edinburgh: Black. (Recd. No. for October, 1848.)

3. Transactions of the Medical Society of London. London.

4. The Transactions of the Provincial Medical and Surgical Association. London.

5. Transactions of the Medical and Physical Society of Bombay. Bombay.

6. The Retrospect of Medicine, being a half-yearly Journal, containing a retrospective View of every Discovery and practical Improvement in the Medical Sciences. Edited by W. Braithwaite. London: Simpkin and Co. (Recd. regularly.)

7. The Half-Yearly Abstract of the Medical Sciences, being a practical and analytical Digest of the principal British and Continental Medical Works, &c. Edited by N. H. Ranking, M. D. London: Churchill. (Recd. regularly.)

8. Guy's Hospital Reports. London: Highley. (Recd. vol. vi. part 1, October, 1848.)

9. The Pharmaceutical Journal and Transactions. London. Edited by Jacob Bell. (Recd. regularly.)

10. The London, Edinburgh, and Dublin Philosophical Magazine, and Journal of Science. Conducted by Sir David Brewster, Richard Taylor, Richard Phillips, and Sir Robert Kane. London: Taylor. (Recd. regularly.)

11. Monthly Journal of Medical Science, in which is incorporated The Northern Journal of Medical Science. Edinburgh: Sutherland and Knox. (Recd. regularly.)
12. The Athenæum—Journal of English and Foreign Literature, Science, &c. London. (Recd. regularly.)
13. London Medical Gazette, or Journal of Practical Medicine. London. (Recd. regularly.)
14. The Medical Times. London. (Recd. regularly.)
15. Provincial Medical and Surgical Journal. London. Edited by Robert Streeten, M. D. Worcester: Dighton and Co. (Recd. regularly.)
16. The American Journal of the Medical Sciences. Edited by Isaac Hays, M. D., Philadelphia. (Not yet recd.)
17. The Medical Examiner and Record of Medical Science. Edited by R. W. Huston, M. D. Philadelphia: Lindsay and Blackeston.
18. The New York Journal of Medicine and the Collateral Sciences. Edited by C. A. Lee, M. D. New York: Langley.
19. The New Orleans Medical and Surgical Journal, devoted to Medicine and the Collateral Sciences. Edited by Drs. Carpenter, Fenner, Harrison, and Hester. New Orleans.
20. The American Journal of Arts and Sciences; conducted by Professor Silliman, and E. Silliman, Jun., and J. D. Dana, New Haven. (Recd. Nos. for 1848.)
21. Southern Medical and Surgical Journal. Edited by Paul Eve, M. D., and J. P. Garvin, M. D. Augusta: M'Cafferty.
22. The Western Journal of Medicine and Surgery. Edited by Drs. Drake, Yandell, and Colescott. Louisville, Ky.
23. The American Journal of Pharmacy. Published by authority of the Philadelphia College of Pharmacy. Edited by J. Carson, M. D., and R. Bridges, M. D. Philadelphia: Merrishow and Thompson.
24. The Boston Medical and Surgical Journal. Boston: Clapp.
25. The American Journal of Insanity. Edited by the Officers of the New York State Lunatic Asylum, Utica. Utica: Bennett, Backus, and Hawley.
26. The British American Journal of Medical and Physical Science. Montreal. (Recd. regularly.)
27. The Southern Journal of Medicine and Pharmacy. Edited by S. D. Sinclair, M. D., and P. C. Gaillard, M. D. Charlestown: Burgess and Symes.
28. The American Journal and Library of Dental Science. Published under the auspices of the American Society of Dental Surgeons.
29. Gazette Médicale de Paris. Paris. (Recd. regularly.)
30. Gazette Medicale de Strasbourg. (Not yet recd.)
31. Gazette Médico-Chirurgicale a Paris. Paris. (Recd. regularly.)
32. La Lancette Française, Gazette des Hôpitaux Civils et Militaires. Paris. (Recd. regularly.)
33. Annales d'Oculistique, publiées par la Dr. Florent Cunier, Bruxelles.
34. Journal de Chimie Medicale, de Pharmacie, de Toxicologie, et Revue de Nouvelles, scientifique, Nationales et Etrangers, &c. Paris.
35. Journal de Pharmacie et de Chimie, &c. Paris. (Recd. regularly.)
36. L'Union Medicale, Journal des entreles scientifiques de pratiques, Moraux et professionnelles du Corps medicale. Paris. (Recd. regularly.)

37. *Revue Médicale Française et Etranger, Journal des Progress de la Medicine Hippocratique.* Par J. B. Cayol. Paris.
38. *Revue Medico-Chirurgicale de Paris.* (Recd. regularly.)
39. *Annales d'Hygiène Publique et de Medecine Legale.* Paris: Bailliere.
40. *Annales Medico-Psychologiques, Journal de l'Anatomie de la Physologie et de la Pathologie.*
41. *Archives Général de Médecine; Journal Complementaire des Sciences Medicales.* Paris. (Recd. regularly.)
42. *Bulletin de l'Academie Royale de Medecine.* Paris: Bailliere. (Recd. regularly.)
43. *Journal des Connaissances Medico-Chirurgicales,* Paris.
44. *Annales et Bulletin de la Societe de Medicine de Gand.* (Recd. regularly.)
45. *Annales de la Société de Médecine Pratique de la Province d'Anvers (établie a Willebroeck).* Boom. (Recd. regularly.)
46. *Bulletin des Travaux de la Société Médico-Pratique de Paris.*
47. *Zeitschrift für die Gesamnte Medicin mit besonderer Rücksicht auf Hospitalpraxis und ausländische Literatur.* Von Dr. F. W. Oppenheim. Hamburg. (Not yet recd.)
48. *Neue Notizen aus dem Gebiete der Natur und Heilkunde, gesammelt und mitgetheilt von D. L. F. Froriep und Dr. R. Froriep.* Weimar. (Recd. Nos. to July.)
49. *Zeitschrift de K. K. Gesellschaft der Aerzte zu Wien—Redakteur Dr. Karl Haller.* Wien. (Not yet recd.)
50. *Zeitschrift für Rationnelle Medezin; Herausgegeben Von Dr. J. Henle und Dr. C. Pfeufer, Professoren der Medecin an der Universitat Zu Heidelberg.*
51. *Journal für Kinderkrankheiten unter Mitwirkung der Herrén Dr. Barez, und Dr. Bemberg; herausgegeben von Dr. F. J. Behrend und Dr. Hildenbrand.* Berlin. (Not yet recd.)
52. *Medecinische Jahrbücher des Kaiserliche Königliche Oesterreichen.* Staats. Wien.
53. *Oesterreichische medecinische Wochenschrift als Ergänzungsblatt der Medicinischen Jährbuch, &c.* (Recd. Nos. to August, 1848.)
54. *Journal für Chirurgie und Augenheilkunde herausgegeben von Dr. P. von Walther und Dr. T. A. von Ammon.* Berlin.
55. *Virteljahrschrift für die praktische Heilkunde.* Prag. Borrosch und Andié.
56. *Annalen der Chemie und Pharmacie herausgegeben von F. Wöhler und Justus Liebig.* Heidelberg.
57. *Bibliothek for Læger, Tredie Række. Udgivet af Direktionen for de classenske Literaturselskab. Redigeret af H. Selmer.* Kjobenhavn. (Not yet recd.)
58. *Norsk Magazin, for Lægevidenskaben, udgivet af Lægeforeningen Christiana.* Redigeret af Faye, W. Boeck, Lund, Voss, A. W. Münster. Christiana, Feilberg, und Landmark.
59. *Gazetta Medica Lombarda. Diretta dal Prof. Panizza, formerly the Gazetta Medica di Milano.* Milan. (Recd. Nos. to June, 1848.)

UNIVERSITY OF DUBLIN.

The degree of M. B. was conferred on the following Gentlemen at the Spring and Summer Commencements in the year 1848:

George F. Ogle.
Christopher F. Flood.
William Rogan.
Richard Pack.
Vesey A. Brown.
John A. Byrne.

Isaac A. D'Olier.
Robert Lyons.
James Sadleir.
Robert B. Smith.
George S. King.
James Daly.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

List of Gentlemen who obtained the Letters Testimonial of the College since 25th October, 1847.

John Coughy Grey.
William Frazer.
William R. Hutton.
Thomas Nash.
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George Smyth King.
Jeremiah O'Flaherty.
John Smyth.
Wensley Bond Jennings.
Sidney Bernard.
Joseph M. Callan.
William G. Doyle.
George D. Gibb.
William B. Sproule.
Francis Whitesone.
William Hill Evans.
James Edmonston.
Edward Ledwich.
John Michael Willey.
Robert Finlay.
James F. Cleary.
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Richard Ross.
George V. Macdonough.
John Casement.
Francis Holton.

Robert T. Dobson.
George Woulfe.
Edward C. Swayne.
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Patrick M'Dermott.
Andrew A. Stoney.
Henry K. Keating.
George Montgomery.
Benjamin Lane.
William Malcolmson.
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James W. T. Smith.
William Armstrong.
John P. Quinlan.
Robert T. Black.
William Heburn.
William T. Bradford.
John H. Halahan.
Robert D. White.
Henry M'Kevett.
Lawrence T. Griffin.
Theobald Richard Trotter.
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APOTHECARIES' HALL.

List of Gentlemen who obtained the License from the Apothecaries' Hall of Dublin since 25th October, 1847.

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Thomas Murney.
John E. Quartermass.
Henry Lynch.
William Malcomson.
John Carson.
Michael Butler.
George Henry Young.
Elijah J. Pring.
Thomas Nash.

Charles Grier.
Josiah Adams.
Samuel Chaplin.
George C. Cotter.
George Halpin.
Robert Carroll.
Thomas John Kelly.
David Foley.
William Salter.
William Frazer.
Nicholas Graham Tyndall.

THE DUBLIN
QUARTERLY JOURNAL
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MEDICAL SCIENCE.

NOVEMBER 1, 1848.

PART I.
ORIGINAL COMMUNICATIONS.

ART. V.—*An Essay upon the Malformations and Congenital Diseases of the Organs of Sight.* By W. R. WILDE, M. R. I. A., F. R. C. S., Surgeon to St. Mark's Ophthalmic Hospital, Honorary Member of the Medical Society of Stockholm, &c. &c. With Illustrations. Part III. Continued.

IN the Number for March, 1845, of the former series of this Journal, I commenced the subject of the present inquiry. In it I noticed the various malformations and congenital diseases of the lachrymal appendages, and also of the globe of the eye, at least so far as size and form were concerned. In the Number for September in the same year I again resumed the subject, and continued the inquiry to that section of it in which the alterations in the structure, size, and shape of the cornea were discussed(*a*). We now approach the most inte-

(*a*) Since the publication of the two former Numbers of this essay, some additional information has been elicited on the subject of the malformations

resting portion of the inquiry,—the congenital peculiarities and diseases of the iris and of the choroid; these, on account of their intimate anatomical relations, and the mode of their early development, I shall consider under the same head in the present Number; and conclude the subject in a subsequent paper with an inquiry into the malformations of the dioptric media and sensitive apparatus, the lens, vitreous humour, retina, and optic nerve, together with the consideration of monocoli, both in man and some of the lower animals(*a*).

A brief review of the most generally received opinions and most faithful observations, as regards the formative process in these parts, will considerably assist our subsequent investigations, by explaining, in many instances, how those arrests of development occur which present such marked peculiarities in after life(*b*). This subject is not one of mere speculative interest or unpractical importance, but is well deserving the attention not only of the special ophthalmic practitioner, but the general surgeon also; for, without some knowledge of it, any one who undertakes the treatment of diseases of the eye may find himself led into serious errors in diagnosis.

In the foetal eye the choroid is developed long antecedent to the iris. This membrane, supposed by Le Cat and Arnold to be the analogue of the pia mater, is said to be apparent so early as the end of the first month, but Valentin could not find any trace of it till the eighth week. The researches of this very of those structures which have already been discussed. This I have embodied, together with some additional cases, which occurred in my own practice, in the Ophthalmic Reports for 1846 and 1847, which appeared in the fifth and tenth Numbers of the present series of this periodical.

(*a*) The malformations of the visual organs in the lower animals shall only be considered so far as they in any way explain or illustrate these peculiarities in the human species.

(*b*) In this and the foregoing essays, I have, in the descriptions of the anatomical developments, referred chiefly to the seventh volume of the *Encyclopédie Anatomique*, Paris, 1843, in which the opinions of the most celebrated German observers are set forth, and where the various authorities and works quoted are specified and set out in full.

accurate observer enabled him at this period to detect two vascular laminæ, enclosing between them a pigmentous layer, and a layer of the proper substance of the choroid (*une couche de substance*), four in all, and developed in the following order: the substantial layer first, then the two vascular envelopes, and finally the pigment. On a microscopical examination, this pigment is found to consist at first of clear globules, which, by compression, subsequently assume the form of hexagonal or pentagonal cellules. In these the dark or pigmentary matter is developed, at first at the periphery, but subsequently it penetrates the entire cellule. The choroid commences to be formed at its anterior or corneal margin, a circumstance which has given rise to so many errors with regard to the development of the iris.

In vertebrate animals embryologists have discovered a thin, colourless line in the choroid, running from within outwards, and ending at the anterior and inferior angle of the eye; this is considered to be a rent (*feute*) of the choroid, and in very early life it is believed to extend to both sclerotic, retina, and vitreous humour; and in the former of these membranes (the choroid) a trace of it can be subsequently recognised by the thinness and tenuity of the structure, as well as the absence of pigment along its course. In some rare instances, this obliterating or fusing process is arrested, and then this curious condition presents at birth, under the form of *coloboma choroideæ*. To account for its appearance many ingenious theories have been put forward, and many vague hypotheses broached. Walther and others have attributed it to the union of the double primary element at this point; if so, however, the line or cicatrix should be mesial and vertical. Huschke considers it a trace of the original separation of the germ into two parts, as explained at page 27 of the first portion of this essay; while Baer denies the existence of the fissure *in toto*; yet he acknowledged that in birds there is in this situation a fold of retina in very early embryonic life, into which the choroid,

devoid of pigment, subsequently insinuates itself, to form the pecten or marsupium, with which every anatomist is acquainted. In some of the cartilaginous fishes (the sturgeon, for instance) I have detected more than one fold of the choroid.

In this fish there is a very remarkable thick, cartilaginous sclerotic, of an irregular shape, particularly upon the internal surface, as is well shown in the drawings to the accompanying notes, which I had made from the eyes of the sturgeon of the Danube, many years ago, in Vienna(*a*); and the choroid is tucked into each of those angles. Baer asserts that the fissure of the choroid which remains permanent in some animals is to be found at a certain period of the embryonic state in man. The ciliary ligament has been found by Valentin so early as

(*a*) It was my original intention to have written an anatomical paper upon the peculiarities of the visual apparatus in this class of fishes; but as matters of more practical importance have intervened since I made the original dissections in 1841, to prevent my again investigating the subject, I think it advisable briefly to mention the result of my inquiries in this place, in order that others more conversant with such matters may take it up; this notice being intended more to elicit investigation than to satisfy inquiry. In a sturgeon (*Sturio accipenser*) of small size it is very difficult to make the necessary examinations, and in one of large proportions the amount of labour required to exhibit the parts in their natural position is, owing to the intense hardness and thickness of the upper section of the head, parts of which can only be cut away with the chisel, very tedious and difficult indeed. Having, however, displayed the parts *in situ*, we observe the following appearance:—the brain remarkably small; the optic globes rather large in proportion; no decussation of the optic nerves, which at once proceed in a forward direction, and at an acute angle to each other; immediately upon leaving the cerebral chamber they traverse in an outward direction a canal in the hard semi-transparent cartilage for about an inch and a half in length; this canal widens towards its external aperture; it is lined by a thick fibrous membrane, and partially, towards its external aperture, by a prolongation of the choroid, or a pigmentous membrane analogous thereto. This fibrous sheath of the canal, which would appear to be analogous to the ordinary neurilemma of the optic nerve in other animals, is continued on to where the nerve pierces the cartilaginous sclerotic, which, in a large specimen of the *Sturio accipenser*, is upwards of three inches in length. Immediately upon the nerve leaving the cranial cavity it begins to break down into a thin membranous

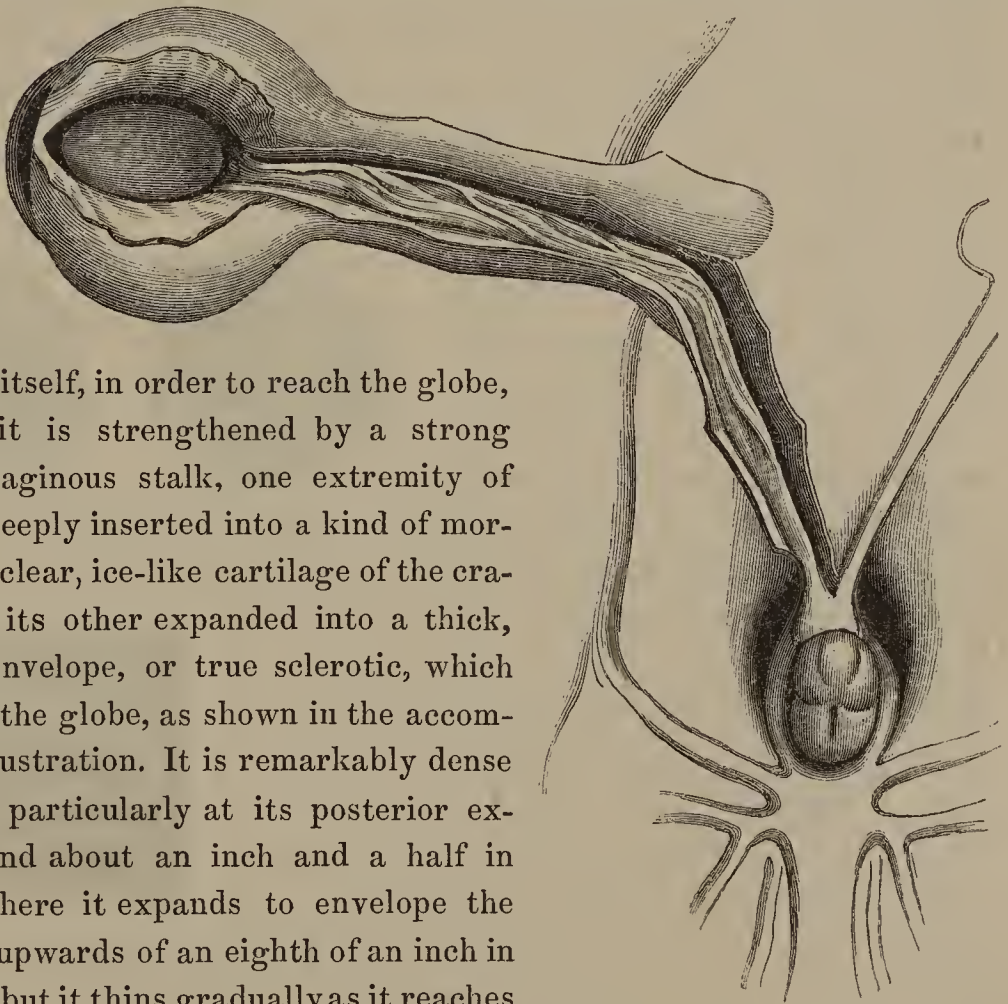
the middle of the third month ; and the formation of the ciliary body commences, according to Arnold, during the fifth week, by a number of small folds (the ciliary processes), at the anterior border of the choroid, where it encircles the margin of the crystalline. Von Ammon, however, has not been able to detect the ciliary processes till the fourth month.

Some slight difference of opinion exists among embryologists as to the precise periods at which the iris can first be seen ; Arnold having stated that he could observe it in the seventh week, while Valentin, to whose opinions great deference should be paid, was unable to perceive it till the end of the third or the beginning of the fourth month. All, however, agree that it is formed subsequently to the choroid. It at first

expansion, which enlarges into a flat, tape-like body, folded upon itself, as shown in the accompanying wood-cut. Having advanced to the edge of the carti-

laginous plate of the skull, this optic tube turns at an acute

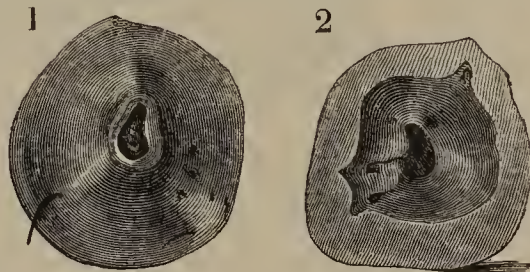
angle with itself, in order to reach the globe, and here it is strengthened by a strong fibro-cartilaginous stalk, one extremity of which is deeply inserted into a kind of mortice in the clear, ice-like cartilage of the cranium, and its other expanded into a thick, fibrinous envelope, or true sclerotic, which surrounds the globe, as shown in the accompanying illustration. It is remarkably dense and thick, particularly at its posterior extremity, and about an inch and a half in length ; where it expands to envelope the globe it is upwards of an eighth of an inch in thickness, but it thins gradually as it reaches the cornea ; it differs from the well-known cartilaginous stalk which attaches the globe to the cranium in some of the osseous fishes by thus surrounding



appears in the form of a narrow transparent ring, which gradually extends inwards from the anterior margin of the choroid, in which the pigment is afterwards deposited on its posterior surface. According to some anatomists it consists of a membraniform expansion of the long ciliary arteries, as the choroid is supposed to be developed from the reticulation of the posterior ciliary vessels. At first the iris is a complete ring without any slit or aperture in it. A contrary opinion, however, was held by many of the most distinguished anatomists, from Malpighi and Haller down to the days of J. Müller; but Bishoff considers that their error arose from observations made upon the anterior border of the choroid (where a natural division

and forming a sheath for the expansion of the optic nerve, which latter, as I have already shown, appears to be resolved into a substance resembling retina in many respects, immediately after leaving the cerebral cavity. Within the external fibrous sclerotic we find a thick, dense, cartilaginous envelope, scarcely susceptible of alteration in its form by pressure between the fingers, a posterior view of which is represented by figure 1, and an anterior view of a transverse section of which is shown by figure 2 in the accompanying wood-cut. The optic nerve, having pierced this cartilaginous body by

means of the ovoid aperture shown in figure 2, does not expand into a hemispherical cup, like that in other animals, but traverses a deep sulcus in the cartilage, and pierces the choroid by a line or fissure of about half an inch in



extent, from which it expands into the ordinary cup-shaped retina, as shown in the accompanying drawing made from a specimen in which the nerve was completely removed from the surrounding parts. I have not had an opportunity of examining the nerve microscopically; but I may remark that, while in the canal between the brain and the globe, it possesses all the physical characters of the retina, being a thin, greyish, semi-transparent lamina, easily breaking down under the fingers or a forceps, and only to be examined effectually by manipulating with a fine camel-hair pencil while the parts are under water, or by hardening the nervous substance by the addition of a little alcohol or alumn. In the first specimen that I examined I was under the impression that this



may be seen in very early life), and not on the actual iris. A vice of conformation, however (coloboma iridis), occasionally takes place, to which we shall presently refer, in which a slit in the iris is found at birth, which rather lent support to the observations of the early anatomists, and to explain which the ingenious hypothesis of Walter—of the eye being formed from the fusion of two lateral and symmetrical portions—was invented. The capsulo-pupillary sac, and the membrana pupillaris, discovered by Wachendorff and Haller, being united by their vessels, must be considered together as one membrano-vascular expansion; the former passing from the surface of the crystalline capsule, traverses the superficies of the posterior

portion of the nerve was tubular, but I have not been able by subsequent observations to satisfy myself upon that point. Where it passes through the fissure in the choroid it is remarkably thin and attenuated, as if constricted or deprived of one or other of its coats at this point; but having fairly entered the eye it becomes more consistent. The choroid is dark brown towards the cartilaginous sclerotic, through which it receives several fine vessels, the trajets of which are seen in the views already given of that structure. The inner surface of the choroid is of a beautiful silvery grey, and, as already stated, this membrane enters deeply into the sinuosities of the surrounding cartilages, where it is intimately united to it by means of those vessels. Posteriorly the external layer of the choroid sends a prolongation into the optic canal, where its black pigment is easily recognised. The lens is globular, but rather larger in proportion to the size of the organ than in most other fishes; the iris presents the tapetum-like appearance of the choroid; the pupil is slightly oval; the cornea flat. A horizontal section of the eye, from the cornea to the optic nerve, gives very much the appearance seen in the eyes of cetaceæ,—the external coats being much thickened posteriorly, and the cavity in the interior bearing no proportion to the size of the globe externally. In a volume of Rheil's Archives (I think for 1825), some notice is taken of this internal cartilaginous sclerotic, but, with this exception, I am not aware of the subject having been investigated by any anatomist; and this was the opinion of Professor Müller of Berlin, to whom I showed the drawings and preparations in 1841. Without a series of expensive, highly-coloured illustrations it would not be possible faithfully to represent the anatomical peculiarities in the eyes of the sturgeon. The foregoing observations, with the accompanying wood-cuts, may, however, serve to draw the attention of future observers to this interesting subject.

chamber to the edge of the pupil, where the anterior layer of the serous membrane of Descemet, uniting with the fine ramification of these vessels derived from the long ciliary arteries already described, and passing across the pupil, forms the *membrana pupillaris*. Generally speaking, this membrane and its vessels disappear shortly before birth, but sometimes it remains permanent for a length of time, constituting a congenital disease which occasionally engages the attention of the surgeon. Embryologists have not discovered any trace of pigment in the eye of the human embryo up to the fourth or fifth week, as already stated; and in the fourth or beginning of the fifth month the iris is said to be invariably found of an uniform blue colour, perfectly smooth upon its surface, and without any of the network which gives that peculiar marking to the front of the iris with which we are all familiar, and which, in all probability, subsequently becomes muscular.

MALFORMATIONS OF THE IRIS AND CHOROID.

The congenital defects and peculiarities of the iris may be classified into three great divisions:—irregularity of colour; deficiency of parenchymatous structure; and abnormal conditions in the size, shape, and position, of the pupil.

Under the first head might be considered, did our space permit, those national peculiarities which distinguish the various races of mankind. This, however, is too wide a field for any minute investigation here; the subject is well set forth in various works upon the physical history of man, and is also touched upon in most modern books of travel.

VARIETIES OF COLOUR.—*Albinos* are frequently found, and indeed were first remarked and described by the Portuguese, among the dark Negro races. We have, however, but few opportunities of examining such curiosities in this country. Furnari, in his *Medical Voyage in Africa*, informs us that albinism or *Leucosis* is very frequent among the Jews of the northern part of that continent; and that, besides the ordinary appear-

ances which albinos usually present, there is in these persons the remarkable peculiarity superadded, of the ciliæ, as well as the skin of the eye-lids, being covered with minute reddish spots. He also states that glaucoma is a very frequent affection among this race; and some pathologists are of opinion that in this disease there is a deficiency of colouring matter in the eye. It has been asserted that dampness and unwholesome air or food assist to induce this disease, and in proof of this assertion it is stated that the Isthmus of Darien, one of the dampest countries in the world, possesses the greatest number of albinos. There can be little doubt but this peculiarity is hereditary; at the same time it is frequently seen among several brothers and sisters of the same family, whose parents or forefathers never exhibited any symptoms of the defect. The general appearance of albinos is too well known to require any minute description(*a*). They are generally below the middle size; the skin all over the body is remarkably fair and fine in texture; the hair of the head is long, of a fine silky texture, and rather inclined to curl, and that upon the brow is generally thick-set and often bushy; the skin of the eye-lids is particularly delicate; the upper lid usually droops somewhat; and the palpebræ are, from the intolerance of light, generally contracted, like those of a person labouring under photophobia. The ciliæ are, like the rest of the hair, long, fine, and silky, and usually more curved than in those persons in whom colouring matter is developed. The globes are in constant oscillatory motion (nystagmus), such as has been already described in the former part of this essay, and

(*a*) The general description of the albino will be found at length in all the cyclopædias. See in particular the articles under this head in the *Encyclopædia Britannica*, *Encyclopædia Metropolitana*, Dr. Bostock's article in *Todd's Cyclopædia of Anatomy and Physiology*, and Dr. Prichard's notices of leucosis and the xanthous varieties of the human race, in his *Physical History of Man*; see also Herr Sach's work on the subject: both this author and his sister were Albinos. See also Söemmerring's and Seiler's great works already referred to.

there is often slight strabismus ; the conjunctiva is pale, except towards the caruncle, where it contains some fine pinkish-red vessels ; the sclerotic is generally somewhat thinner than natural ; the cornea presents no well-marked peculiarities that I am aware of ; but the iris and choroid are of a brilliant pink colour, owing to the total absence of all pigmentous matter permitting the vascular arrangement of these membranes to be seen and thus present this peculiarity(a). Several of the writers who have described the eyes of human albinos mention irregularities in the position and form of the pupil ; but these I believe to be accidental or exceptional peculiarities, not the ordinary condition in such cases. The iris is peculiarly brilliant, and in all instances which I have examined, it differs in colour from the deep pink hue of the pupil by having a slight trace of white and blue colour mixed through it, the former being caused by well-marked development of the internal circle and the radiating fibres which appear upon its surface. I lately dilated the pupils of an albino, and observed that as the irides expanded their bluish hue increased in intensity, and contrasted the more forcibly with the brilliant pink tint seen through the enlarged pupil. The pupils, which are remarkably sensitive, are, it is said, usually drawn upwards, and in some instances a minute line of dark-coloured pigment may be observed on the margin of the extreme edge of the iris : this peculiarity I have only observed in horses. Buzzi, who has written an interesting anatomical memoir on the albino eye, has found the iris white in the dead subject, without any trace whatever of uvea ; the choroid fine in texture and light red ; the retina normal, but whiter and finer than usual ; the macula lutea close to the origin of the retina, and somewhat higher in colour than natural : this latter pecu-

(a) Blumenbach, in October, 1784, first advanced this theory, and before the end of that year Signor Buzzi verified it by actual dissection. Mr. T. W. Jones has shown that the membrane of the pigment or choroidal epithelium is present in albinos, though devoid of colouring matter.

liarity, however, has not been confirmed by the observations of others(a).

From the absolute albino, where there is a total deficiency of colouring matter, to the normal state of the dark-eyed races, we find numerous varieties of imperfect and incomplete leucosis, presenting more or less the general characteristics in the hair, intolerance of light, trembling condition of the globe, &c., &c. In the xanthian variety the iris is of a lilac tinge, and the hair presents a greenish hue; whereas in some forms of leucosis a violet or purplish tint of the eyes predominates, from the admixture of the blue and rose-red colours.

All such persons, as well as true albinos, are weak-sighted, and what is generally styled purblind, seeing best in a modified light, or in the dusk. Although I have seen the hairs on the brow and the eye-lashes perfectly white on one side and dark on the other, I have never heard of an instance in which one eye was affected with leucosis and the other not. In a case related by Seiler the eye-lashes were white, the irides of a bluish red, but the hair on the brows and over the head generally was dark. Partial leucosis has, however, been observed in animals in a wild as well as those in a domestic state, particularly those denominated piebald; but I feel assured that, in many instances, these spots upon the iris are not colourless, but arise from a peculiar *white* deposit, similar to that which is denominated a "wall-eye," so frequently seen in mottled dogs and cream-coloured horses.

In the human embryo observers have not found any pigmentous deposit until the fourth or fifth week, so that it is probable that an arrest of development has been the cause of this peculiarity. Cases of leucosis are recorded in which it would appear that some colouring matter was deposited after birth. Dr. Graves has related a very remarkable instance of this,

(a) A question here suggests itself, whether the yellow colour seen round the foramen of Söemmerring, and which is supposed to be a ganglionic appearance, is really a pigment.

in which, in a born albino, the “ eyes had changed from violet-red to grey, and his hair from white to light-brown, and that the susceptibility of the eyes to the light had greatly diminished”(a). I do not believe, however, that any of the cases in which the eyes darkened in after life, presented at birth the highest degree of complete leucosis. I have myself had an opportunity of examining a case of this description in the person of Master D——, aged about three years, when I first saw him, in 1843, along with Dr. Brereton. His irides at that time were a light lilac blue, and his pupils a violet-red colour; there was partial oscillation of the globes, which were somewhat enlarged, and the corneæ were more prominent than natural: the hair of the head, as well as that upon the brows and eye-lids, was then of a dirty cream colour. His parents and attendants stated that he was born an albino, the hair being then much whiter, and the eyes of a bright pink. I have frequently seen this child since; both eyes and hair have become considerably darker, so that at present the latter are what would be termed light blue. The boy is, however, very weakly, and the vision (apparently owing to some enlargement of the globes) has not improved with the development of colouring matter. Sybel relates a case in which the outer ring of both irides was, at its upper part, of a rose-red colour till the eighth day after birth when it became a dark brown. Meyer and Aschersohn have observed similar instances where colouring matter appears to have been developed after birth: the first in a child born with violet-coloured eyes, which at the end of the third year were changed to blue, and the white hair to light brown; the second where a very light blue-grey iris, with red pupil, altered at the end of the seventh year to a cherry brown. Fermin relates cases in which a peculiar light appears to have been emitted in the dark from the eyes of albinos(b).

It still remains questionable whether treatment can in any

(a) See Prichard's *Natural History of Man*, second edition, 1845, p. 79.

(b) *Description de Surinam*. Paris, 1769.

way promote the deposit of colouring matter, the deficiency of which is the cause of leucosis.

The natural colours of the iris are different shades of brown and hazel, yellowish, light and dark blue, and blue grey. The term true black can scarcely be applied to any condition of the iris, although I have seen instances, even in Europeans, in which it was not possible, without a very close examination, to discover any difference between the colour of the pupil and iris. According to some observations made by M. Petrequin upon the inhabitants of France and the adjoining countries, it appears that the grey eyes predominate among males and the brown among females, and that in both, the light-coloured eyes predominate over the dark considerably. With the intention of drawing up some statistical tables with respect to the diseases which prevail among individuals with different coloured irides, I have had the colour of the eyes noted in my hospital registry for the last eighteen months, and find the result to be as follows:

Of 2776 individuals, 1884 had light eyes, consisting of 752 blue, and 1132 grey, in the proportions of 992 males to 892 females; 288 hazel, and 604 dark eyes, varying in shade from light brown to what is denominated black; the proportion of males to females in this latter class (amounting altogether to 892), being 470 males to 422 females. From this series of observations it follows, that, in the Irish population in and about Dublin, the proportion of light to dark eyes is nearly three to one, speaking in round numbers.

There are, however, particular localities in Ireland in which dark eyes predominate, as in certain parts of Galway, Kerry, and Londonderry, but not to any great extent. In these places I have observed that the females possessed the dark eye in the greatest numbers. The true orange-brown eye, found in connexion with auburn hair, is very rare in Ireland; but a yellow-orange, with wiry reddish-chesnut hair and densely freckled skin, is by no means uncommon here. The very light blue eye, with dark hair, brows, and eye-lashes, still obtains in many parts west of the Shannon.

The most frequent peculiarity of the iris consists in partial varieties of colour, denominated by the ancients *Heterophthalmus*, of which we have frequent examples among the light-eyed Celtic inhabitants of these countries. One of the most remarkable examples of these irregularities of colour consists in one iris being light blue or grey, and the other dark brown, of which I have seen several instances. Another example of this peculiarity consists in a portion of the iris, frequently the lower or outer half, being brown or hazel, the remainder blue or grey, and the iris upon the opposite side being also light-coloured. Spots and patches of a dark colour, varying from the deepest shade of brown to that of light cinnamon colour, and even to a yellowish hue, are frequently observed in light eyes; and it behoves the practitioner to be well acquainted with these circumstances, as such blemishes might possibly be mistaken for the result of disease; and in cases in which a surgeon is called upon for the first time to visit a patient labouring under ophthalmia, in whom such peculiarities exist, it is possible that a serious error might be committed. I have never seen congenital maculæ or discoloration of the iris in very dark eyes, and I have never known these defects to influence vision one way or the other.

One of the most remarkable instances of mottled irides which has yet been recorded is that related by Professor Osborne, in the seventh volume of the former series of this Journal, page 33, and which also proves that these peculiarities are sometimes hereditary. In this case the irides were of a "dusky, light yellowish ground, and a number of dark, reddish brown spots were sprinkled on them in an irregular manner, but in greatest number towards the internal angle of each eye. The spots on the back of a tortoise-shell cat afford the best resemblance." The person who was the subject of this peculiarity had fifteen brothers and five sisters, who all possessed the same peculiarity, which was derived from his mother, whose three sisters and one brother had the same, which was in her again derived from the mother's side. This peculiarity, which was

well known and recognised in that part of the country (county Waterford) from which this patient came, had always been believed to be transmissible by intermarriage or descent.

Sometimes the adventitious colour occupies the whole breadth of the iris; in other cases it appears in isolated patches. I lately published an account of a very peculiar and until then undescribed form of discoloration. In this case,

“ On examining the eyes at about two feet distance, the edge of each pupil appeared remarkably ragged and irregular, so as to look like a case of synechia posterior, the result of iritis, in which the attachment of the iris to the lens had been put upon the stretch by the action of belladonna. Upon a closer view the appearance turned out, however, to be the result of an irregular circle of remarkably black pigment (darker even than that which is usually found upon the uvea) which occupied the inner fifth of the circle of the iris, and was apparently raised above the surface of that membrane. It was with some difficulty that the pupillary margin (which was perfectly normal) could be distinguished at the distance of even twelve inches. The outer edge of this deposit, though most irregular, was very sharply defined. Either the pigmentary membrane turned round the pupillary margin and spread over the anterior surface of the iris, or the parenchymatous structure of the iris was congenitally deficient at this point, and allowed the uvea to be seen anteriorly. The circles and radiating lines were not well marked in this person's irides”(a).

It is unnecessary to adduce more instances of varieties of colour in the iris, the result of congenital defect. The lower animals, dogs in particular, frequently present these peculiarities.

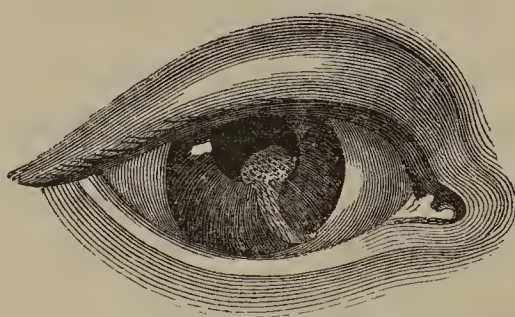
The development or deficiency of the peculiar striæ, loops, and rings upon the surface of the iris gives rise to certain well-

(a) See the Author's Report on the Progress of Ophthalmic Surgery for the Year 1846, in Dublin Quarterly Journal for February, 1847.

known appearances, which it is unnecessary to detail. Some years ago a child was exhibited on whose irides it is said the words “Napoleon Empereur” were written. This phenomenon, which attracted much attention at the time, appears to have been produced by an unusual arrangement of those loops, bands, and striæ,—similar to the fleshy pillars and tendinous cords of the heart,—which mark the surface of the ocular diaphragm, and which a stretch of the imagination amplified into the letters forming the name of the Emperor(a).

Between the varieties of colour and the deficiencies in the structure of the iris may be placed the defect denominated *Korestenoma*, in which there is not only a difference in colour, but also an unnatural projection of the substance of the iris within the circle of the pupil in any one part. This congenital peculiarity, which is one of the very rarest forms of malformation, is faithfully represented by the accompanying wood-cut, copied from Dr. Szokalski’s paper on the subject, which I lately re-published from the Prague Medical Journal.

“The subject of this malformation was a girl of scrofulous constitution, born with hare-lip, and said to be affected with syphilis. The irides were light blue, and in each iris was observed a light yellow stroke of a conical shape; it arose broad from the border of the pupil, and extended obliquely downwards and inwards to the ciliary margin. In the right eye, however, its upper edge formed a rounded, wart-like protuberance, which projected into the pupil, and occupied about half the size of that aperture in its moderately dilated state, and also extended



(a) I possess a very good lithograph of “Josephine Louis, the French child born with the words “Napoleon Empereur” in its eyes.” Upon the lower section of the right iris the marks resemble the capital letters in the word “Empereur,” and the word “Napoleon” occupies somewhat the same position on the left iris.

into the anterior chamber. It was said to be covered with minute hairs. The other parts of the eye were normal. While the ordinary discoloration of the iris, which this resembles, has been accounted for on the belief that it is an early cicatrix of this membrane, no plausible hypothesis has yet been advanced which will explain this peculiar fault in the formation of the ocular diaphragm. A case similar to this is reported to have occurred in the practice of the venerable Walther of Munich"(a).

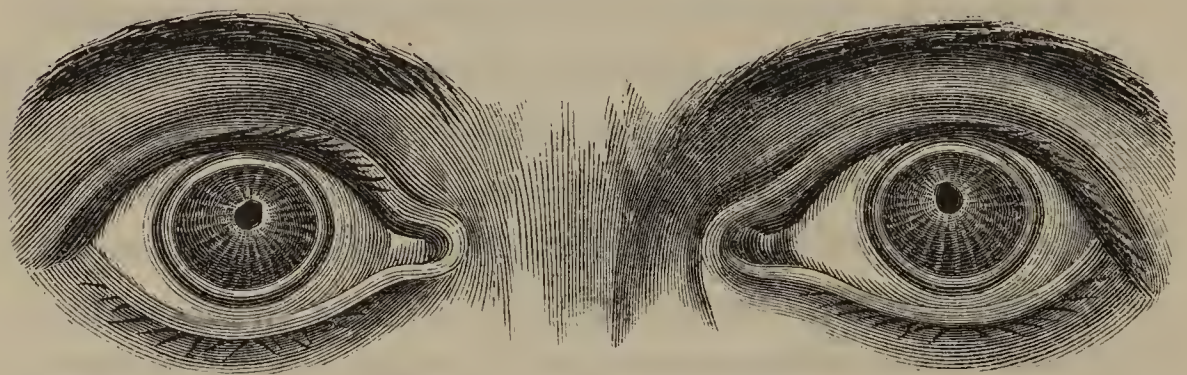
Although the Russian physician has, and perhaps correctly, placed this peculiarity under the head of *Korestenoma*, yet it differs in many respects from the affection to which Ammon first applied this name, and which he has described and figured in his *Klinische Darstellung*, as a thick, adventitious, and abnormal substance, probably a growth from the persisting pupillary membrane, filling up the pupil, except a small aperture in the centre. Borthwick mentions a case of this description in the *Edinburgh Medical and Physical Commentaries*, vol. i.

The fact of the case related by Dr. Szokalski having been mistaken and treated for syphilitic iritis, with lymph effused on the surface and border of the iris, is in itself a sufficient proof of the necessity of the profession being made acquainted with all these vices of conformation.

MALFORMATION OF THE PUPIL.—The varieties in the position, form, and size of the pupil, next engage our attention. The two most remarkable of these are the over-contraction and the over-dilatation, compared either with the average magnitude of this aperture in the human eye generally, or with the eye upon the opposite side in the same person, supposing it to be normal. To the former, or the state of contraction, is applied the term *Myosis* or *Microcoria*, and to the latter or preternatural dilatation, *Mydriasis*. Both these con-

(a) *Vierteljahrschrift für die praktische Heilkunde* III., Jahrgang, 1846. *Vierter Band*. Prag. See Dublin Quarterly Journal for May, 1848, p. 472.

ditions, however, are occasionally induced by disease, and certain poisons, such as opium, belladonna, &c.; and the former sometimes exists quite independent of any mechanical hinderance, such as attachment to the capsule of the lens, &c. It would, however, be out of place in this essay to enter upon either the accidental varieties or the causes which induce these affections in after life. The accompanying drawing very faithfully represents one of the most remarkable instances of *Congenital Myosis*, joined with *Corectopia*, or displacement



of the pupil, and other peculiarities both in the colour and structure of the iris, that I have yet met or read of. In this case the iris is of a greyish slate colour, with a number of whitish lines radiating from the pupil upon all sides, and there is a total deficiency of those looped or transverse bands which assist to form the ordinary circles of the membrane, which is also slightly oscillatory. The pupils, which are placed in the junction between the upper and middle thirds of the iris, are not more than the size of large pins' heads, but susceptible of dilatation by modification of light,—that upon the right side ovoid, that on the left somewhat quadrangular; at first view, however, the edges of both appear to be irregular and fringed, but this, by careful examination with a lens, we find to arise from the turning over of the pigment round the pupillary edge, as in the case described at page 265. There is a very broad, well-marked corneal ring, resembling the arcus senilis; but in this case it was congenital. The eyes are almost exactly alike upon both sides. The subject of this peculiarity never suffered from disease of the eyes of any description, and none of his

family have been similarly affected. Although at present rather near-sighted, he has been able to shoot snipe, and to follow his profession, that of an officer, without any inconvenience(a).

Sometimes but one eye is affected with eccentric pupil. To the irregular or abnormal position of the pupil the terms *Corectopia* and *Parastrophe* are applied. Here is an example which serves also to illustrate the displacement as well as the preternatural contraction of the pupil, which is here situated in the upper and outer side of the iris in the right eye. The subject of this defect, who is a labouring man, has also very weak and uncertain sight with both eyes, but particularly the right.



When I first saw this person he was under treatment for what was believed to be syphilitic iritis, with irregular pupil. In his case we have another instance of the necessity of being acquainted with these malformations. I lately extracted a cataract from an old lady in whom congenital myosis presented considerable opposition to the exit of the lens.

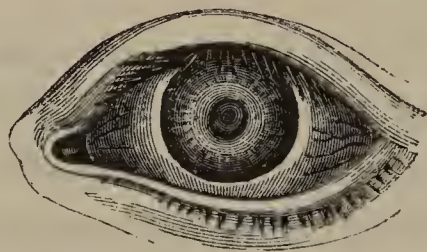
During the past year I operated upon a case of acquired cataract in a young gentleman from the north of Ireland, whose elder brother, then about twenty, presented the following appearances. The right eye was perfectly normal, and of a bluish grey colour; the left, on the contrary, was yellowish brown, the iris tremulous, the pupil placed in the upper and outer third of it, not larger than a good-sized pin's head, and

(a) I cannot allow this opportunity to pass without expressing to Captain O—— my sense of the obligation under which he has placed me by permitting the drawing of his eyes, from which the accompanying wood-cut was made, to be taken.

totally incapable of motion. Although he had vision with this eye sufficient to find his way, it was totally useless in reading or for examining minute objects.

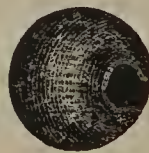
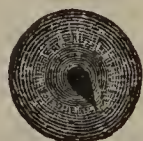
Demours has accurately figured the eccentric pupil(*a*). Schwartz believed it to be at times hereditary: he saw two sisters in whose left eyes the pupils occupied the inferior ciliary edge of the irides, and in whose right eyes they were placed superiorly; in the brother of these girls the pupils were placed superiorly in both eyes(*b*). Similar remarkable cases have been related by Ritter, Baer, and others; these, however, are sufficient to explain this portion of the subject, my object being to present the profession with types of the various malformations, without entering immediately into the description of each different variety, and to illustrate this essay, as far as in my power, with original engravings.

Almost similar in appearance to the instances mentioned at p. 268 is that shown by this illustration, which represents a high degree of congenital permanent contraction of the pupil (*Microcoria*) in the left eye. The iris was greyish at the circumference, but light cinnamon-coloured towards the pupillary margin. This person was remarkably near-sighted.



I have seen cases of *Mydriasis* in which it was stated that the enlargement of the pupil was observed so shortly after birth as to make me believe that they were congenital; very little disturbance of vision was experienced in after life. In congenital amaurosis we have sometimes well-marked dilatation.

Dyscoria or *Coremetamorphosis*.—The three forms of pupil figured here, which are copied from Ammon's great work, together with those upon the opposite page, may be taken as



types of the varieties which this aperture presents. The variety of form, however, which the pupil presents, independent of loss of parenchymatous structure, is infinite,—triangular, comet-shaped, oval, heart-shaped, fringed, irregular, linear, and even square. Here is a specimen of well-marked irre-



gularity of the pupillary edge of the iris, in connexion with central opacity of the capsule of the lens, where the aperture is stellated, apparently caused by persistence of portions of the pupillary membrane.

Sometimes we find a sort of fringe projecting into the pupil at one point, as is the natural condition in several fishes, the ray, for example; and again, in other cases, we observe a single knob or projection jutting into and distorting the pupillary circle, as in *korestenoma*.

Himly observed a case where the pupillary opening was not circular, but indented to the depth of a line. In one eye he saw several such indentations, so that the margin of the pupil formed seven small semicircles(*a*). The idea is forced upon us that several of these abnormal conditions are the result of disease *in utero*. One of the most remarkable forms of pupil



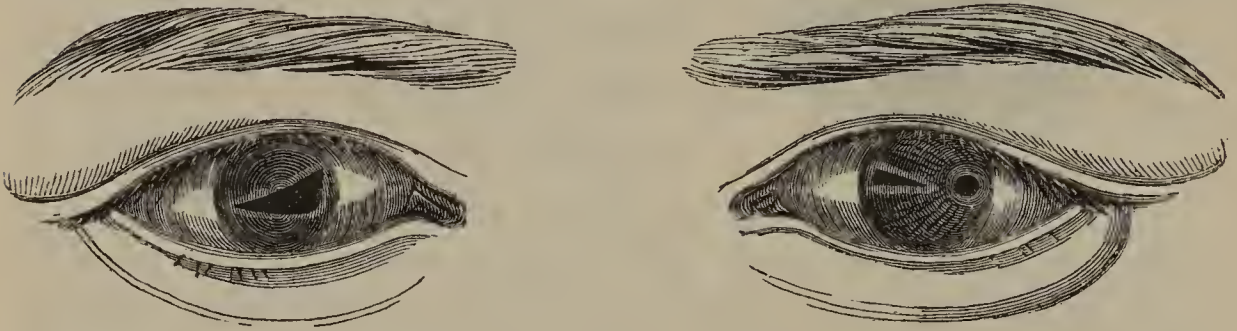
which I have yet met with is shown by this figure, for the drawing of which I am indebted to my friend Mr. W. W. Cooper. It represents the right eye in a female infant, none of whose progenitors ever had any peculiarity of the visual organs.

The eyes were similar on both sides; the irides were a mottled brown or hazel, and each pupil in its contracted state presented a fine transverse line extending nearly across the entire breadth of the iris, but dilating into an elliptical aperture in a modified light, or under the influence of belladonna. The

(*a*) Wardrop, vol. ii. p. 38.

vision was perfect, and there was no hereditary tendency to malformation of the eyes.

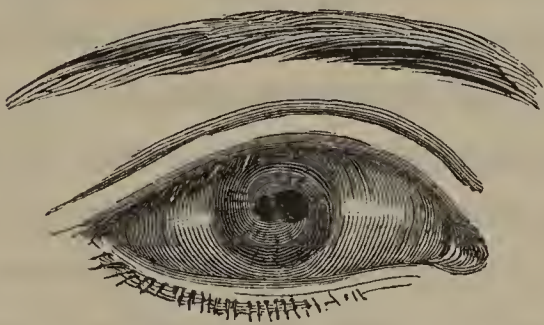
While passing through the wards of Steevens' Hospital a few years ago, my attention was attracted by a young man then labouring under an accident, whose eyes presented the very extraordinary and unique peculiarities shown by the accom-



panying engraving. The palpebral apertures were rather narrow and elliptical; the globes and corneæ natural; the irides were dark brown. Upon the right side there existed a large triangular pupil, extending right across the iris (which was of a homogeneous dark brown), its edges slightly curved, and its entire margin bordered by a narrow band of a bluish tint. In the left iris, which was lighter in colour and its striæ more developed, there were two pupils, the internal one triangular and extending from about the centre of the membrane to its ciliary attachment; its edges bordered with a light brown margin paler in colour and more dense in appearance than the surrounding iris. The external pupil, situated between that just described and the outer edge of the iris, was perfectly circular, and in its medium state of the size here represented, for it alone of the three pupils seemed to be susceptible of motion, at least to any extent. It was surrounded by a well defined broad band or circle of slate-coloured blue, about half a line in breadth. The radiating lines of the iris all appeared to tend to this pupil. The person who was the subject of this malformation was rather dull of comprehension, and totally uneducated; he stated that he followed his occupation, that of attending a lime kiln, without inconvenience; but it was manifest that

his vision was not good. In this case we have a complication of irregularity, malposition, deformities, and plurality of pupils, as well as a form of coloboma.

Polycoria or a plurality of pupils, though rare, is not by any means an unknown irregularity. One of the simplest forms is that shown by the accompanying wood-cut, representing the right eye of a gentleman of my acquaintance, where a simple band, probably a remnant of the membrane of Wachendorff, crosses the normal opening and produces an hour-glass or figure of 8



pupil, both sections of which are obedient to light. In this case the other eye is perfectly natural, and this gentleman sees equally well with both eyes. Another case is that in which there is a nor-

mal pupil both in size, form, and situation, with a deficiency upon one side of the iris, which, however, is separated from the true pupil by a narrow band of the free edge of the iris, which separates it from the latter, thus causing a second aperture. But for this band the case would be one of coloboma iridis, a peculiarity to be described further on. An instance has been recorded of three pupils, the lower one being circular and natural, although misplaced, and the two upper mere elliptical apertures(*a*). In all the instances of polycoria which I have met with or seen described, except that figured on the opposite page, the second pupil was irregular in form. None of the cases of plurality of pupils that I have met with had double vision.

(*a*) This case is figured by Von Ammon, vol. iii. plate ix. fig. 24. In one of our ancient Irish manuscripts we read that Chucullan, the celebrated Irish chieftain, had a plurality of pupils in one of his eyes; and also of Ingil, son of the King of the Britons, who had an eye as large as an ox. Many instances of this nature might be adduced from our early Irish chronicles. See the Author's Introductory Address, in the *Lancet* for April 19, 1845.

Himly relates a case in which the normal and abnormal pupils alternately contracted and dilated. Wardrop says that "sometimes a double pupil is met with in one eye when other parts are single; and sometimes both lens and pupil have been found double"(a). I have never known an instance of double pupil in both eyes, nor have I ever heard of such. Polloplasis pupillæ, as this deformity is styled by some recent German authors, is occasionally observed among the lower animals, thus Sybel saw it in the eye of a calf; and a preparation of this nature is shown in Mickel's celebrated anatomical collection at Halle. This deformity will again come under our consideration when describing the eye in the cyclops monster.

Atresia Pupillæ, or Sinizesis Congenita.—The closure of the iridial aperture produced by persistence of the pupillary membrane, is, in all probability, a much more frequent disease at birth than we are aware of; but as it seldom remains permanent for any length of time, and very rarely engages the attention of the surgeon, it has been to a certain degree overlooked. Cases have been recorded by Wrisberg, Wenzel, Cheselden, Von Ammon, Paolo Bernard(b), and others. I gave the history of Dr. Bernard's case (which was mistaken for opacity of the crystalline capsule), in my last Ophthalmic Report (p. 499). "When it is not observed after birth, it appears," says Wardrop, "in the form of an opaque web, which is easily distinguished from cataract by its being vascular, from the size of the pupil being unaltered, and from its being on the same plane with the iris." It is probable that persistence of the membrane may be owing to some iritic inflammation *in utero*. Occasionally small spurs of dark coloured membrane may be seen in adult life,

(a) Morbid Anatomy of the Human Eye, vol. ii. p. 40. In this case he refers to "*Voigtel's Handbuch.*"

(b) *Gazetta Medica di Milano*, for 26th Dec. 1846, quoted in the May Number of this Journal for 1848; see also M. J. Cloquet's *Memoire sur la Membrane Pupillaire*, Paris, 1818; and Dr. Jacob's valuable paper on its anatomy in the twelfth volume of the Medico-Chirurgical Transactions.

jutting out from the place of attachment of the pupillary membrane on its anterior margin.

I have remarked that, in most of these cases of malformed irides and pupils, the colours differed materially from the normal hues in healthy eyes. There is a want of brilliancy upon the surface of the membrane; the general colour is, as it were, dirty; the greenish and slate-coloured tints sometimes produced by disease in after life predominate towards the ciliary margin; and the pupillary circle, in the great majority of instances, is of a light cinnamon or yellow colour.

Tremulous Iris.—There can, I think, be little doubt but that tremulous iris is occasionally a congenital defect. In this disease a portion of the iris at some particular spot waves backwards and forwards upon the slightest motion of the eye or head. When the whole iris oscillates, as sometimes happens after the removal of the lens, or from the effects of concussion, it is believed to result from a want of support caused by fluidity of the vitreous humour. This hypothesis, however, will not explain the phenomenon of partial oscillation of the iris, which appears to result from paralysis of some of the radiating or dilating fibres of the iris. I have occasionally seen cases of paralysis of a portion of the circular or contracting fibres of the iris, causing distortion of the pupil at that particular point. If the iris be carefully examined in these cases, particularly in its contracted state, it will be seen that the usual plaits, or folding in as if by a running string, of the free edge of the iris, are deficient at this point, the surface of the membrane being there quite plane and smooth and the colour less intense. Should we not reckon among the congenital peculiarities the voluntary power of contracting and enlarging the pupil which it is said some persons are endowed with?

COLOBOMA IRIDIS.—This term has been applied by ophthalmic pathologists to a deficiency of the parenchymatous structure of the iris at some particular point, generally in the lower segment, by which the pupil presents the pear-like or

key-hole appearance shown by some of the accompanying illustrations. Two forms of this disease have been enumerated by writers: that caused by accident, with which we do not here deal, and that which presents as an unnatural formation at birth, *Coloboma Iridis Congenitum*, or *Iridochisma*. This peculiarity was first named by Walther of Munich, who described it in 1810, and afterwards in 1821. Since then the subject has been frequently discussed in various medical periodicals in Europe, and the defect is now usually enumerated in ophthalmic works under the head of the congenital diseases of the iris. This author was not, however, altogether original in his discovery of coloboma, or split iris, for it is manifest that some of the very early writers were acquainted with it. Thus Thomas Bartholinus not only mentioned but figured it so early as 1672. The pupil figured by Bartholinus is of the true key-hole shape; his description of it is, “huic pupilla sinistri oculi non rotunda, ad oblonga est hac forma sine detrimento aut mutatione visus”(a). But in those days congenital peculiarities, which were usually denominated freaks of nature, received but little attention from pathologists. Block, Meckel, and other writers of those times, also noticed it.

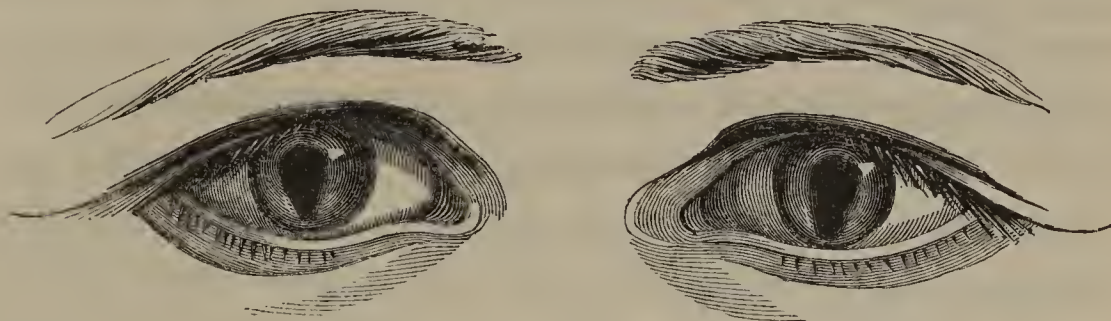
Mr. Wardrop, although he did not name this “malconformation,” was perfectly well aware of its occasional existence, when he published the second volume of his *Morbid Anatomy of the Human Eye*, in 1818; and, under the head “of alterations in the form of the pupil,” quotes most of the authorities then known on the subject of coloboma.

I myself have seen ten, and had drawings made of seven cases of coloboma, and a sufficient number of instances have been enumerated and figured by others to enable modern writers to classify and arrange the different varieties under certain heads.

The most common form consists in a prolongation of the

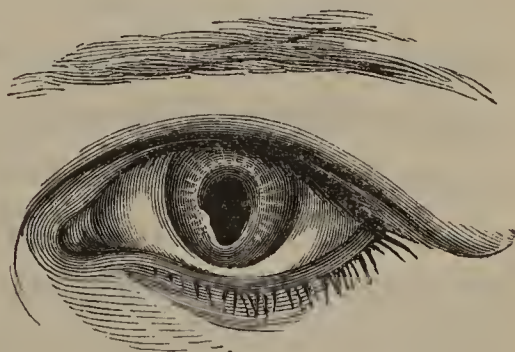
(a) *Acta Medica et Philosophica Hafniensia*, Hafniæ, 1673, p. 62.

natural pupil downwards and slightly inwards, as shown by the annexed engraving of the eyes of a boy aged eight years, the cat's pupil appearance of whose eyes attracted my attention when visiting one of our workhouses a few years ago. This is the simplest form of complete double cleft iris. The irides



were blue-grey and somewhat deficient, particularly round the lower edge of the prolonged pupil, in those loops and arches which form the marks and circles upon these membranes in a well-developed natural state. The pupils were susceptible of light, and contracted partially, but the upper normal portion much more so than the cleft or prolongation; they did not quite reach to the ciliary edge of the iris. In this, as well as in all the cases of coloboma in both eyes which I have seen, the prolonged pupils slightly converged inwards as well as downwards. This boy experienced no inconvenience whatever from this peculiarity; his sight was remarkably good, and, except among his playmates, the unnatural condition of his pupils had not attracted attention.

Two years after the drawing had been taken, from which the foregoing engraving was made, I had the accompanying illustration of the minute structure of the left iris painted, which shows the whitish radiating fibres round the upper margin of the pupil, ending in a circular light-coloured band immediately surrounding the pupillary edge, but which are wanting in the lower or cleft portion. This drawing



also shows the shoulder which usually exists in such cases at the junction of the cleft and the normal pupil.

As regards position, coloboma may occur in any part of the iris: most frequently, however, it is observed in the inferior section, next to that internally, then outwards, and, rarest of all, it may appear in the upper segment of the iris. It much more frequently exists in both eyes than in one. It may be present, as in the case just figured, without any other peculiarity or defect; but it is often found in connexion with other ophthalmic malformations, particularly micophthalmia, coloboma palpebræ, irregular-shaped lens, split choroid and vitreous humour, and also with cleft palate and hare lip. At page 108 of the former portion of this essay, I described and figured a case of iridochisma connected with microphthalmus and strabismus, &c. Here again is an illustration of a somewhat similar case in Mary Craig, a young woman aged 22, a native of the County Wicklow, of whom I gave an account in February, 1847(*a*). Both eyes are remarkably sunken, the globe of the left is somewhat less than the natural size; the cornea irregular in shape; the iris is a deep brown colour, and wanting its circles and radiating lines; the

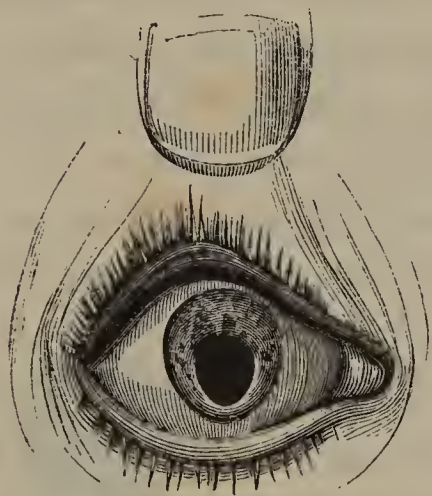


pupil is ovoid and placed in the inferior half of the iris; the superior edges of its upper great extremity being about the centre, and its lower pointed end running down almost to the ciliary edge of the iris. The globe of the right eye is scarcely one-half the size even of the left, and the palpebral aperture, which is a very narrow ellipse, is about a third less than the

(*a*) See Ophthalmic Report in Dublin Quarterly Journal for Feb., 1847.

left; the sclerotic is thin and bluish, and the cornea disproportionately small and irregular. The iris has a homogeneous brown colour, somewhat lighter than that on the left side; the pupil occupies more than one-half its perpendicular diameter, and is somewhat more triangular than that upon the opposite side. There is slight nystagmus of both eyes; her sight is very defective, and has become much worse during the last few years.

The amount of deficiency of the iris in both these cases,—that now related, and the one figured in the previous part of this paper,—resembles more partial iriderimia than true coloboma, in which there is generally some distinction between the segment of the true pupil and the cleft or prolongation.



Although the striæ and circles which mark the well-developed iris were wanting in several of the cases which I have observed, there was in the case of Ellen Sullivan—described and figured at page 108, vol. xxviii. of the former series of this Journal—a peculiar whitish mottling on the upper segment of the blue iris, as shown by the accompanying cut.

Coloboma has been divided into complete and incomplete. The former degree, in which there is a thorough division of the iris, is sufficiently shown by the foregoing illustrations. The latter, or more penetrating form, consists in an apparent attempt at fissure, the external parenchymatous and coloured substance of the iris being deficient, thus allowing the dark pigment of the uvea to appear anteriorly through the thin transparent membrane of the aqueous humour(*a*), as is

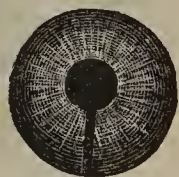
(*a*) It is possible that the solution of continuity which originally existed in the embryonic state in this case may have subsequently healed *in utero*. I am acquainted with a child who was born with a well-marked cicatrix a little to the right of the mesian line of the upper lip, and bearing all the characters of a united hare-lip.

well exemplified in the accompanying illustration, which has been kindly placed at my disposal by my friend Mr. Dalrymple, of London. In this we find a perfect iridochisma of the right eye in a young man aged 22, with very light hazel irides, whose globes were also somewhat smaller than natural. Upon the left side the pupil is circular, but an irregular dark space,



extending downwards from it to the margin of the cornea, marks the partial cleft of the iris. Dr. Rau, who, I believe, first called attention to this form, has mentioned a few similar cases(a). Helling has also seen the disease.

Gescheit enumerates three varieties or degrees of coloboma: first, that with parallel edges, of which the accompanying representation affords a good idea. Second, with convergent legs, which is the most common, and of which the foregoing examples of pear-form pupils are sufficiently characteristic. And, third, that in which the base of the coloboma is below or placed next to the ciliary edge. The last is the rarest form. The third engraving, under the head of dyscorea, at page 270, as also the pupils figured at page 272, are illustrations of it, Ammon has given but two cases of this variety.



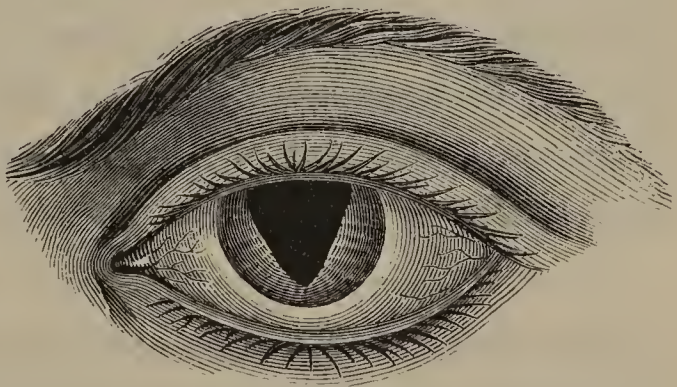
The edges of the cleft are seldom linear, they are usually slightly curved, sometimes irregular, usually thin, and occasionally deficient of pigment, and there is very seldom a perfect correspondence or a similarity between the fissures upon both sides; and in the best marked cases there is a sort of shoulder defining the limit of the original pupil. As already

(a) *Die Krankheiten und Bildungsfehler der Regenbogenhaut.* Bern, 1845.

stated, the internal or pupillary circle of the iris does not surround the cleft, but is either altogether wanting in the iris, or, existing round the upper circular portion of the pupil, it gradually shades off towards the part where the cleft commences. In some cases, as in that of Mary Craig, whose eyes are figured at page 278, the coloboma is nearly circular in the right eye, and egg-shaped as in the left.

In addition to the forms already specified, I may add the accompanying very rare peculiarity, for the drawing of which I am indebted to Dr. Butcher, who was good enough to procure it for me from Dr. M'Evers of Cork. Although not drawn very artistically, it is, I believe, a faithful representation of this very singular variety of malformation. It shows the left eye of a young man aged about 20, with auburn hair and bluish grey eyes. In this case the globe was normal, but the pupils occupied the greater portion of the iris, and were completely triangular, the inferior point almost touching the ciliary circle. They were nearly symmetrical, that on the right side, however, was somewhat narrower

than that upon the left; their lateral edges were straighter and sharper than is usually the case, but the internal edge was slightly irregular upon both sides; and the



superior one was somewhat curved. I have not been able to learn more of the history of this case. Dr. Mess of Leyden has recorded a similar case of V-shaped pupil(a). Rau saw double coloboma, in which two small narrow splits, placed close beside each other, existed in the same iris.

As I already stated, there is frequently very little defect of vision in cases of simple coloboma uncombined with other malformations. From the variety of opinions which have been

(a) *Annales d' Oculistique*, tom. vii. p. 179.

expressed with regard to the influence of belladonna, it is manifest that great variety must exist with regard to its effects, depending, no doubt, upon the amount, degree, and position of the cleft, and the perfection or deficiency of other parts of the organ. Dr. Mackenzie, in describing a case of coloboma in 1831, says, "both the natural pupil and the cleft proceeding from it contracted on sudden exposure to light, but the cleft slowly, and not so as to close, at least in a modified light"(a).

Mr. Middlemore, in describing cleft iris, under the title of "Cordiform Pupil," says, "The prolongation of the pupil possesses the power (though not in a very active degree) of contraction, so that when the eye is suddenly subjected to the influence of a vivid light, the cleft in the iris is nearly closed, and the defect in the form of the pupil is scarcely visible." Such, however, has not been my experience. I have never seen a case in which the cleft "nearly closed" under any circumstances.

There can be little doubt of coloboma being hereditary. Wardrop's work contains the following facts and authorities on this subject: "Block knew a family in whom the father, with his children, nephews, and nieces, had long-shaped pupils. One of the daughters and one of the nephews had in one eye the pupil oval, and in the other it was circular. Conradi mentions

(a) London Medical Gazette, vol. ix. p. 738, 1842; see also the article Coloboma, by Mr. T. Wharton Jones, in the Cyclopædia of Practical Surgery, part viii., and also his Manual of Ophthalmic Medicine and Surgery, page 319; see also Middlemore's Treatise on the Diseases of the Eye, vol. ii. p. 761; Seiler's *Beobachtungen Urspruenglicher Bildungsfehler und Gaenzlichen Mangels der Augen Bei Menschen und Thieren*, fol. Dresden, 1833.

Since the first portion of this essay was published, M. Desmarres of Paris published his *Traite Theorique et Pratique des Maladies des Yeux* (1847), in which he includes the congenital malformations. This portion of the Parisian oculist's book possesses little originality, and is very defective in reference to cases published in Great Britain. The latest and best work upon the subject is *Die Krankheiten und Bildungsfehler der Regenbogenhaut*, von Dr. Wilhelm Rau.

that he knew a father, daughter, and grand-daughter, in whom the under margin of the pupil was, as it were, cut out; the pupil consequently was not round but oval, and run oblong to a point at the lower part. Hagström saw a whole family, in which each member had such a large oval-shaped pupil that the under edge of the iris had quite vanished. Acrell saw a similar deformity, which was hereditary."

Rau assents to the same opinion, and adduces many instances in support of it. Himly records the fact of three children in one family, and the father and son in another, being affected with it.

Several hypotheses have been put forward to account for coloboma iridis. By most authors it is believed to be an arrest of development at a very early period of uterine life, when a cleft naturally exists, it is said, in the choroid, which occasionally runs on into the iris. In a case dissected by Ammon, not only was the iris cleft but also the choroid, retina, and the ciliary processes; and externally a bluish projection corresponding to the line of the fissure was observed in the sclerotic. This case bears out the theory of Walther, already referred to; but Rudolphi and Udgin, who had likewise opportunities of dissecting cases of coloboma, were unable to confirm the observations of the Dresden author; but they found the lens deficient at its lower part and the vitreous humour fluid. Moreover, we frequently find coloboma existing in situations where no fissure of the choroid has ever been observed, as on the upper and outer sides. Comparative anatomy, it is true, rather confirms the views of Walther and Ammon, for in several fish and some molluscs we find both the sclerotic and retina cleft. In birds, and also in some amphibians, there is a cleft in the choroid and sclerotic, and, it is said, in the iris of the sheep foetus also. Irregularity of the cornea, protuberance of the sclerotic along the line of the cleft, and congenital cataract, are often found in connexion with coloboma. According to Gescheit the iridochisma is owing to the non-closure of the choroid split Seiler believed it to

be caused by a want of perfect anastomosis, or accidental obliteration of the iris vessels. Baer believed that it was owing to the too rapid absorption or over absorption of the pupillary membrane. In some instances the ciliary body is distorted and prolonged, or bent backwards behind the end of the split, but not interrupted.

IRIDERIMIA.—The iris has been found altogether absent, or only partially present. To the total deficiency of the iris the term *complete iriderimia* has been applied; and when there is only a rudimentary portion of the membrane existing at birth, the word *partial*, or *incomplete*, is used. So many instances of this peculiarity have now been observed, that it is only necessary to make a selection of the most remarkable and characteristic cases. Without coloured engravings it would not be possible to convey, by means of illustrations, anything like an adequate idea of this malformation.

A very interesting case, of total loss of the iris, occurred in England in the year 1826, in a girl, in whom, shortly after birth, her mother remarked a peculiar general blackness of the eyes,—the usual characteristic of this affection. Upon examination it was found that both irides were deficient; the corneæ were more prominent than usual; and there was great intolerance of light, as well as irregular motion or trembling of the globe. When the child was two years old the eyes became more steady, and the light was more tolerated, but vision was very defective. She saw better in the evening or in a modified light,—nay, as the observations were extended, and the child became more sensible, it is reported that she could distinguish objects even in complete darkness, or at least what would be considered so by any other person. She liked to look at the most brilliant colours, such as scarlet and yellow; and when examining objects she always placed them very near the eyes, and somewhat below the usual axis of vision. If placed in a darkened room, and the rays of light were made to fall upon the eyes, “they assumed,” says the narrator, “a sort of

reddish phosphorescence, like rubies, or burning coals.”(a) The other senses were all natural.

Another case of congenital deficiency of the irides, both total and partial, is related by M. Cazentree, of Bordeaux, in a man aged 46. In this case there was no vestige of iris in the right eye, and the left presented merely a slight crescent-shaped slip of this membrane. Both corneæ were a little convex, and somewhat smaller than natural; the ciliary ligament is said to have projected inwards, and performed somewhat the office of an iris. At first this case was considered to be one of total blindness, but as the child advanced in years the eye became less sensible to the over stimulus of light; and at the period when examined by M. Cazentree, although there was great disturbance of vision, the subject of the malformation could distinguish objects placed near him. Great photophobia still existed; the lids were usually kept closed during the bright part of the day, and he experienced great pain in the orbits when his eyes were exposed to strong sun-light. By candle-light all objects appeared to him as if enveloped in a thick fog, but it is said that he was able to read in a degree of darkness where it would have been quite impossible for any one else to have done so.

Shortly after this case was recorded, Mr. Willisford published a somewhat similar one of *partial iriderimia*, in which the corneæ were natural. On the outer and lower side of each eye a small section of a greyish membrane, the rudimentary iris, still existed; there was great vacillation, which was a good deal increased by excitement. It was observed that, while nursing, “the child would keep its eyes fixed on the sun for several minutes together, without showing any uneasiness;” and yet, in the subsequent history of the case, we are told that when the child was four years of age it could pick up

(a) A question here suggests itself as to whether the brilliancy of the cat’s eye in the dark is not owing to the complete expansion of the iris, and not to any tapetum structure.

a pin from the ground. In this instance the head was somewhat deformed, and hydrocephalus existed in the family.

Von Ammon mentions three sisters, born without irides, and the father of these girls had only a rudiment of the iris at the lower margin of the cornea.

Gutbier, who has written an inaugural dissertation on this defect, mentions the following curious circumstance with regard to its hereditary transmission. Christian Keal, the youngest of eight brothers, each of whose eyes were normal, had this defect. He had eight children, of whom three boys inherited the malformation of the father. The eldest of these had four sons, in whom the irides were absent in all except the second, who possessed it but only in a rudimentary form. The second son of the original Christian Keal had a daughter, in whose eyes the irides were deficient; and the third had two children, a daughter, with deficiency of the irides, and a male child with eyes well-formed. These cases are quoted by Mr. Lawrence.

In *partial iriderimia* there is generally but a small segment of the lower or inner edge of the iris existing, as I have explained in some of the previous cases; but Demours has given a drawing and description of a congenital deficiency of about a third of the inferior or inner edge of the iris, which I believe is the only instance of the kind recorded. In most cases the segment of the iris forms a slight crescentic projection: but in Demours' case the edge of the iris was nearly straight; the iris itself was brown, and there was no pupil. These remarks are chiefly founded on the drawing, as his description is very defective.

In both the complete and incomplete varieties cataract has frequently been observed; and even in cases where at birth the lens was perfectly clear, either it or its capsule became subsequently opaque, probably owing to the constant over-exposure to light; therefore, in such cases, means should be taken either by coloured glasses, or some mechanical contrivance analogous to the pupil, to obviate, if possible, the occurrence of this acci-

dent. Carron du Villers has recorded some cases of iridemia connected with tremulous cataract and nystagmus. The least degree of partial iridemia is, perhaps, but an aggravated form of coloboma, of which the drawings of the eyes of Sullivan and Craig afford examples. Ammon has figured a case in which two distinct half-moon-shaped segments of the iris existed at the lower part. Lusardi has recorded a case of total absence of the iris in one eye, and in the other of the same patient a remnant of the iris, a line broad, existed. Henschel observed a rudimentary iris in a man whose children had no irides at all. Willis, Helling, and Rau, have observed cases where there was considerable deficiency of the anterior layer of the iris, resembling somewhat the form of partial coloboma already described. In looking over the records of cases of defect of iris it appears that females are much more frequently the subject of it than males, but Forchon observed it in three generations of the same family in males only. The partial form of the disease is much less frequent than the complete. In the *Annales d'Oculistique* will be found several instances of both these defects. Many years ago Morrison observed this peculiarity in London. Mr. Middlemore has given, in the first volume of his *Treatise on Diseases of the Eye*, a most accurate description of two cases which he had an opportunity of observing; and Mr. France has also given, in *Guy's Hospital Reports*, the history of a very interesting case which is particularly valuable, from his observations having been continued for a great length of time. It would not, however, increase the value of this essay to multiply instances beyond those which I have now afforded.

MALFORMATIONS OF THE CHOROID.

Peculiarities of Colour.—The abnormal conditions discovered in the choroid membrane at birth are comparatively rare, and, owing to the scarcity of dissections, as well as to the concealed position of this structure during life, very few cases have

as yet been observed or described. In the foregoing observations upon the congenital defects of the iris most of the remarkable peculiarities of the choroid have been detailed, especially under the head of leucosis, where there is either a *partial or total deficiency of its pigment*. And again, in connexion with certain cases of coloboma iridis, the split or fissure of the choroid has been found existing in later life, and extending backwards through the entire length of its inferior portion. This, however, is but an arrest of development, like that which occurs in other congenital fissures, for, as has already been shown, in considering the anatomy of this part, a cleft exists as a normal condition in the early embryonic state.

Instances of partial deficiency of pigment, in which the inner surface of the membrane presented a greyish mottled appearance, have been observed, of which Ammon gives some examples: one in particular, where the iris exhibited the same speckled appearance. In cases of glaucoma it has been observed that the colouring matter of the choroid assumes a lighter tint; and specimens of this peculiarity have likewise been observed at birth, both in man and some ruminating animals. Dr. Prinz, of Dresden, has described a form of congenital glaucoma, which he has several times seen in lambs where this peculiarity existed. The choroid has also been observed of a reddish brown or fawn-colour, particularly at its fundus.

The converse state to leucosis, that of preternatural development of the pigmentary matter, has been remarked in certain cases of congenital hydrophthalmia and amaurosis, as well as in cyanosis. I have, however, seen a case of congenital amaurosis in which there was a well-formed blue iris, where a light coloured, tapetum-like appearance presented at the bottom of the eye, very different, however, from the condition presented in malignant disease, and too deep to have its seat either in the posterior capsule of the lens or in the vitreous humour surrounding it.

Deficiency of Choroid.—Coloboma choroidea has been al-

ready described. An instance has been recorded by Von Ammon of a partial transverse fissure of the choroid immediately behind the ciliary body, the two portions being joined by a kind of net-work(*a*). I can find but one well-marked instance of total absence of the choroid; it is that related by Klinkosch, of Prague, in 1766(*b*). In the case in which this peculiarity existed, the eyes were in other respects remarkably malformed, and more resembled, it is said, hydatids than true visual organs. There is no mention made of the state of the iris in this case; but Seiler, in quoting it, says the ciliary body was partially present.

The double choroid and the fusion of the vascular membrane of the eye will come under consideration when the subject of monocoli is investigated. The number of ciliary processes is said to vary exceedingly in different eyes; their distortion in cases of coloboma has already been remarked.

(*To be continued.*)

ART. VI.—*On the Progress of Asiatic Cholera.* By ROBERT J. GRAVES, M. D.

IN the sixteenth volume of the first series of this Journal I published a sketch of the origin and progress of Asiatic Cholera, and brought forward evidence which appeared to warrant the conclusion that it is propagated chiefly by means of contagion. The collection of materials for that paper occupied much time, and their arrangement cost me considerable labour; nor did I arrive at the result there sought to be established without the most assiduous reflection, and a conscientious interpretation of recorded facts.

(*a*) *Klinische Darstellungen der angeborenen Krankheiten*, tab. xv. figs. 7, 8.

(*b*) I have not seen Klinkosch's work. It is thus quoted by Seiler: "Programma quo anat. partus capite monst. proponit." Prag. 1766, p. 7. It is referred to by Himly, Ammon, and all the German writers upon the subject.

The recent progress of the disease, as it bears upon this subject, is treated in the second edition of my *Clinical Medicine*, just published, and I must refer the reader, for additional arguments, to the *Lectures on Cholera* contained in the first volume of that work. Still, as Lord Morpeth, in the House of Commons, and the Sanitary Commissioners appointed by Government, have expressed an opinion contrary to what I have set forth, I am bound, in justice to myself, to bring forward additional evidence in favour of the conclusion I before advocated. But other, and still more powerful reasons induce me to resume the subject at the present moment; for I find that the non-contagious nature of cholera is so authoritatively maintained, that everywhere throughout the country, physicians, when consulted, have advised that the sheds built for the reception of fever patients should not be retained for the purpose of accommodating persons attacked with cholera; and, swayed by their opinion, the poor law guardians have already ordered several of these temporary hospitals to be pulled down.

The manner in which the former and the present epidemic of cholera has diffused itself,—travelling, year after year, by the main routes of communication, until it has visited almost every civilized country on the surface of the globe,—presents what at first appears an unparalleled example of the extension of disease; but it is only so in appearance, because other diseases have also spread similarly, although, their diffusion having happened at a time when the communication between countries was rarer, and intelligence was not obtainable concerning the history of their propagation, their progress was not noted with the same accuracy, and the date of their arrival at each place was unrecorded. There can be no doubt that the spread of syphilis offered something analogous; and that small-pox, measles, and scarlatina,—of the date and locality of whose first appearance we are ignorant,—extended themselves in a similar manner, and were found in every country holding intercourse either by land or sea with those where they originated;

and, consequently, while these diseases were long-established scourges all over the three continents comprised within the limits of the old world, Australia and the Americas, together with the isles of the Pacific, were spared, until the discoveries of modern navigators had opened a path to those extensive regions also. Thus it is that in everything human we find a mixture of good and evil; even the most splendid discoveries, no matter how pure their conception, lead not to results always free from alloy. The rapid communication that now binds the most distant parts of the world together, and which causes the journals of London to be daily encyclopædias of what is simultaneously telegraphed from the most remote countries, might be supposed to be capable of producing nothing but unmixed good. But it has been evidently the cause of a serious change in the moral, intellectual, and social state of the world, the consequences of which can as yet be scarcely appreciated. Nations are now no longer insulated collections of individuals, so separated that the events occurring in any one are scarcely felt even by its neighbours. The passions, the emotions, the constitutional struggles of a people, soon overflow the boundaries of their country, and roll on like a tidal ocean-wave, which breaks successively on every shore; while, as is proved by events quite recent, governments are powerless in their attempts to construct artificial ramparts to stem its progress. Whether this may ultimately be productive of moral benefit to the human race, is a question that can be only solved by futurity. But it can admit of no doubt that the inter-communication between distant countries not only renders us acquainted with the wants of each individual member of the general society of nations, but stimulates us, from interested motives, to relieve them; and, consequently, the physical condition of man must, by this means, be in many respects improved. As an instance of the important benefits which arise from this daily contact between nations, we may adduce the impossibility of the recurrence of such famines as frequently half

destroyed the populations of Europe and Asia in the dark ages.

Had a calamity such as threw its dark shadow over Ireland in 1846 occurred a thousand years ago, what succour, what aid, could have been expected? A whole nation might have perished, and the knowledge of its fate would have extended scarcely beyond the nearest ports of the now sister island; but Providence timed it otherwise, and the intelligence of the disaster, everywhere conveyed, everywhere excited sympathy; and so active were the efforts to relieve, that, long before the year of trial had expired, contributions had reached us from Australia, New Zealand, Ceylon, the farthest India, the most remote Africa, and from our American kinsmen: contributions which, added to the gifts presented by European, and, above all, by English benevolence, brought to our shores such a supply of food, that this people survives, a monument of the combined love and charity of the whole family of mankind.

But this evident and paramount advantage is, as we have seen, to a certain extent counterbalanced by the fact, that the caravans and ships which transport the comforts, ornaments, and means of life, which convey merchandise and food, may arrive likewise freighted with the seeds of death, with plague, fever, or cholera.

It becomes, therefore, a state question of great importance, in a country like England, in whose ports vessels arrive every hour from various quarters of the world, how far it is possible, under such circumstances, to prevent the importation of disease. Where the contagious malady, such as the plague, is usually confined within certain limits, and can only obtain an exit from the territory it infests through a small number of given outlets, then other states may guard against its importation by imposing quarantine upon vessels coming from the infected ports. But it is far otherwise with regard to the cholera. Advancing from the east, it has travelled slowly and steadily during the last few years through Russia, and at the present moment forms a semi-

circle, stretching from Egypt through Turkey, Hungary, Poland, and Finland, and is travelling along the radii of communication towards the central parts of Europe from so many points, that the idea of protecting ourselves by quarantine from its importation must be abandoned. We must bear in mind, too, that Great Britain chiefly depends on trade for the support of millions of her population, and that any quarantine laws which had the effect of closing all the channels of her commerce (and, to be efficacious, they should close them all), would speedily produce such distress in the manufacturing districts as would occasion starvation so intense and extensive, that more deaths would arise from the operation of this cause alone, than could possibly be produced by the introduction of any disease, however infectious. Connected as we are, therefore, by our commercial intercourse, with every country and every climate, we must submit to the dangers which may arise from this new consequence of commerce, — *free trade in diseases*. But, although the question respecting the infectious nature of cholera does not concern the quarantine laws, and can lead to no curtailment of the activity of our merchants, and though the knowledge of its being infectious may not serve to guard us against its incursions, it may, nevertheless, materially aid us in diminishing the extent of its ravages. If the disease be not contagious there is no danger in placing cholera patients in general hospitals; there is no use, so far as guarding against the extension of the disease, in removing the sick from private dwellings; and such indeed is the view of the case taken by the Dublin Sanitary Association, as appears in the following extracts from their Circular:

“ 1st. As the Sanitary Commissioners of London, after long and careful investigation, have come to the conclusion that the disease is epidemic, and not contagious; and as the fear of contagion, in the last epidemic of cholera, caused a great panic in those who were unaffected, and led to a neglect of the

sick at a period of the disease when assistance was most valuable; the sub-committee recommend that on the first appearance of cholera a placard embodying this opinion should be extensively circulated among the poor, for the purpose of removing their apprehensions."

"4th. The London Sanitary Commissioners having given their opinion against the establishment of large cholera hospitals, and in favour of providing cholera wards in existing hospitals for the very destitute, and having come to the conclusion that all but the very destitute would have a better chance of recovering by staying at home, your sub-committee, coinciding in these opinions, recommend that depots of clothing, blankets, flannel, &c., be established, in addition to the ordinary medicines, in order to meet the necessities of those patients who may not avail themselves of the hospitals.

"5th. And further, that, for the purpose of securing attendance upon this class of patients, a corps of nurse-tenders be formed, whose names shall be registered at each parochial dispensary, and who shall be placed at the disposal of the cholera physician, under regulations to be hereafter drawn up."

I am glad, however, to find that at a meeting of the Dublin Sanitary Association, held on Wednesday the 24th of August, the following sensible observations emanated from the Chairman, Sir Edward Borough, whose exertions have been so eminently useful to the citizens of Dublin in directing the exertions of the poor law guardians of the South Union:

"The Chairman stated that the bill brought in by Sir W. M. Somerville, on the 10th of August, continues the Acts 10 Vict. c. 6, and 10 Vict. c. 22, re-enacting the same system of appointment of relief or hospital committees, but repealing such portions of both as enacts the payment of expenses out of the funds at the disposal of relief commissioners. Clause 5 enacts that, provided three members of relief committee certify expenses, &c., the board of guardians shall pay same out of the rates. The Chairman continued to say that, from a conversa-

tion which he had recently with some medical men of great eminence, and much experience in the city, he was induced to submit the following suggestions emanating from them to the committee of the Sanitary Association. It is very strongly recommended that the city of Dublin should be divided without loss of time into districts, and sanitary committees should be formed in these districts, so as to be prepared with the machinery for working the bill introduced into the House of Commons on the 10th of this month, in the event of the visitation of cholera, fever, or other disease, whether epidemic or contagious. There ought to be four cholera hospitals for Dublin, *i. e.* two in addition to the late temporary fever hospitals. To each should be attached a superintendent and a medical assistant for every twenty-five patients; all to reside within the hospital, and to be provided with breakfast, dinner, and a bed in the building. There should be prepared a list of thirty such assistants (say medical students, if licentiates cannot be procured), from which the staff of each hospital, as it is wanted, can be completed; and suitable arrangements should be made for the transport of patients from their own dwellings, it being manifest that patients among the poorer classes, such as room-keepers, can scarcely be treated in their own dwellings, and that they ought to be moved to hospital. Simple forms of treatment on the first appearance of premonitory symptoms, and general directions, clearly and intelligibly drawn up, should be prepared and got ready for circulation, as has been done in Russia. All these arrangements may be made quietly, so as not to alarm the public; but, coming as these recommendations do from a most experienced quarter, the Chairman considered them to merit serious consideration. The Chairman, in continuation, drew the attention of the Committee to the resolutions of the Medical Committee of the Manchester Royal Infirmary, in which the erection of special cholera hospitals had been advocated."

Nothing appears to me to be more consistent with previous

experience and the dictates of common sense, than the arrangements here proposed by Sir Edward Borough.

In the years 1832 and 1834, four large hospitals were provided by Government for the reception of cholera patients, and ample means for carrying them to the public institutions were everywhere at hand. The working of this system was most satisfactory; and the smallness of the number attacked, compared with the population of the city, may, I am persuaded, be accounted for by the sick being so quickly taken from amidst the healthy, and thus a focus of contagion in each case avoided.

Advocating as I do the establishment of hospitals for the reception of cholera patients, I am by no means prepared to deny that in many instances the removal of the sick will be attended with fatal results, and that consequently it would be wiser to have them treated at home; and I am glad that my opinion receives the support of Dr. Cane, who thus expresses himself on the subject(*a*):

“Hospital accommodation should be ready in every locality for those who have no homes, for those whose homes are wretched and miserable, and for those who, either sent by their friends or at their own desire, will seek its shelter. In addition to such hospital accommodation, arrangements should be made for attendance upon the sick at their own homes; and the physicians intrusted with this duty should have a power to employ nurses, and order all suitable nourishment, as well as medicine. Those visiting attendants should have a discretionary power, whom to attend at their own residences, and whom to recommend to hospital; such should always be decided by a medical man, and not by mere officers of health.

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There are many disadvantages in the removal of a patient in confirmed cholera,—so many disadvantages, that they never should be encountered at all, unless where they are

(*a*) Dublin Medical Press, August 16, pp. 98, 99.

preponderated over by some decided advantages, not to be had unless in hospital. Thus in a large rural district, where, super-added to wretched and uncomfortable homes, is the disadvantage that the physician cannot visit over such an extent as often as he should do in justice to the patient. Here hospital accommodation has its advantages. Again, where the sufferers have been seized upon the road-side, or in the fields; or where the home is a cabin, whose damp floor and leaky roof, or unchimneyed stove, or where defective light or ventilation make it an unfit place for the treatment of such disease: but with these and the like exceptions, in no case should the sick be compelled, in violence to their own and their friends' feelings, to pass from home to an hospital. I may be here met by the statement of the superior comfort of an hospital; granted. But these comforts are all counter-balanced, and too often rendered valueless, by a forcible removal. I will take a case,—I have seen it! A patient has been seized with cholera; the diarrhoea, the emesis, the spasms, the raucous voice, the rice stools, are all present; still there is some pulse, some heat of surface, and some room for hope. The officer of health visits him; he must be removed; he pleads, and friends plead for him. His heart is in his home;—it is all in vain; the authorities are brought, he is lifted out of his bed; it may be he is, or is not, rolled in hot blankets, placed in a cot or car, and carried a mile or half a mile to hospital. From that cot or car he is taken into the hospital, and found to be purple, cold, and pulseless. I have seen such a patient dead when the cot was opened. The lifting him in and out, the excitement, the agitation, the fears aroused, and the depression inflicted upon his mind, have turned the balance, dispersed the hopes, and killed the patient. I would not write thus strongly were it not that I feel the terrible conviction upon my mind that such ill-judged interferences have been too frequently murders; and I cannot call to mind a single case of *forcible avulsion* from home, where the disease was true cholera, that ended in recovery.

It is, therefore, a matter of the weightiest import for all authorities, local and otherwise, boards and officers of health, how far those considerations shall weigh with them, and influence the mode of medical aid for the poor."

I have been induced again to take up the subject of cholera, not merely for the purpose of bringing forward matter that I think may be useful to society, by suggesting to our rulers the best methods of medical police to be adopted when the disease arrives in Ireland, but also for the purpose of cursorily pointing out some of the many absurdities that have been broached, both in medical works and the newspapers of the day, concerning the origin, nature, and diffusion of this disease. Thus we find in a London paper of the first authority, that when the fact was noticed of the cholera having travelled from Moscow to Petersburg, its route on this occasion was declared to be a new proof of its *fluviatile origin*,—an expression, by the by, of which writers seem much enamoured. I would humbly offer, as a slight objection to the accuracy of this remark, that no river flows, or possibly could flow, from Moscow to Petersburg, as, if water attempted to accomplish the alleged journey, it would have on the way much up-hill work.

In opposition to this fluviatile theory, it is deserving of notice that the boatmen on the Danube, employed in the navigation of boats down that stream, have been but rarely affected by the disease; and simply for this reason, that they hold very little communication with the inhabitants on either bank, having provisions on board to enable them to complete their voyage.

Rivers, as constituting in many countries the chief routes of communication, must, for that reason, be the channels by which infectious diseases are conveyed; but that rivers, marshes, or humid localities, are not in themselves capable of generating cholera, is evident from the fact, that in every quarter of the world places of this description, when out of the line of

march of the cholera, and containing inhabitants who lead a secluded life, have escaped.

In the *Hamburgh Nachrichten*, 26th of July, 1848, I find the following astounding piece of philosophical intelligence, imparted in a letter from Petersburg of the 12th of July: "The cholera is now considerably on the decrease. That the state of the atmosphere underwent considerable changes upon the approach and setting-in of this disease, has been placed beyond a doubt by the experiments of men of science, who have found that as soon as cholera had set-in there was an almost total failure of the necessary electricity in the air; and that this was accompanied by a notable weakening of the force of the magnet; so that, when the disease was at its acme, the magnet, which in the usual state of the atmosphere was capable of sustaining forty pounds, could not lift more than four or five. During the last week its power has increased to sixteen pounds, and the disease is now on the decline." Intelligence so cheering must have been very satisfactory to the citizens of Petersburg; an announcement so scientific must have proved most encouraging. This specimen of philosophy has, I believe, found its way into every newspaper in Europe; after which who will exclaim, "*Magna est veritas, et prævalebit*,"—for, surely, in these latter days, it is error that is winged, while truth, unfledged, creeps slowly behind.

Neither time nor space will permit me to notice with the attention it deserves a by no means short treatise that has been written on the fungous origin of cholera(*a*); but I cannot resist laying before my readers, whether for their instruction or amusement, the concluding paragraphs of so learned a work,—paragraphs which, after all, distribute the blame of giving rise to epidemics pretty equally between the animal and vegetable

(*a*) A Disquisition on Pestilential Cholera; being an Attempt to explain its Phenomena, Nature, Cause, Prevention, and Treatment, by reference to an extrinsic fungous Origin. By Charles Cowdell, M. B., M. R. C. S. 8vo., 210 pages!

kingdoms, and support a theory as impossible to refute as to establish !

“The best qualified observers of the phenomena of pestilential disease believe, that the morbid matter, suspended in the air, is inhaled with it by the lungs, and is thus admitted into the circulating blood. Whatever antidote can be administered to the poison so inhaled had better, therefore, be taken in the same manner. Now amongst the agents described by Professor Graham (quoted p. 194) as preventive of fermentation, and also familiarly known to prevent the growth of mould and mildew (fungi), organisms resembling those which effect fermentation, are the aromatic and essential oils. The author, therefore, proposes, that by a simple contrivance,—a kind of respirator of double wire gauze,—a porous substance of woollen texture imbued with one of the essential oils (probably cloves will be found best), should be so placed as that the vapour should be inhaled, and thus, entering with the morbid fungous germs, will, it is hoped, effectually prevent their vegetation, and consequent morbid effects. This practice will, of course, require caution as to the quantity of essential oil employed. In addition to this, the use of aromatics—and none better than cloves—in food and beverage, should, during the prevalence of pestilence, be more than ordinarily abundant. Tonics, and especially sulphate of copper,—eminently anti-fungic, as well as an invaluable remedy in chronic diarrhoea,—may be also employed as prophylactics. Stimulants (wine or other beverage mulled) taken internally may be used with advantage by those exposed to the morbid virus ; and are especially necessary to repel the first impression made by such virus (as quoted from Dr. Copland at p. 96).

“2nd. *Curative*.—This, to be of any efficacy, must be practised while absorption of medicine from the stomach and alimentary canal can take place, which is found too often to be impracticable in the advanced stages of the disorder. We should ourselves give the sulphate of copper, with stimulants

and aromatics to make it sit on the stomach : nor should we, except in persons so robust and plethoric as to endanger their convalescence with inflammatory sequelæ, have recourse to bleeding. The use of astringents with aromatics,—by friction with essential oils in embrocations, by aromatic fumigation, after Simeon Seth, and, recently, Dr. Copland, and by aromatic inhalation as now proposed, as well as by the mouth,—is indicated. Any of the methods in use may, with apparently equal advantage, be employed in the advanced stages, and, indeed, in the early ones of severe cases. We again repeat, that the attention of medical men must be directed rather to the prevention than the cure of this pestilence, except in its mildest forms, in many cases of which probably a fatal issue would not be the result, were they left solely to nature. Prevention may, we trust, be confidently expected from an application of the means deducible from science, and which we have striven in this work to exhibit.

“ *Conclusion.*—Conscious that the instruments employed in exposing to view the previously concealed agents in the production of pestilential cholera have been, from want of practice, unskilfully used, it is, nevertheless, hoped that this effort will not be totally unproductive of benefit. It would be out of place here to enter at length into speculations on the causes of other epidemics. But we may be permitted to express an opinion that many of our known epidemics have their origin in fungous vegetation ; some of them, like influenza, acting immediately upon human beings,—others requiring (except in localities possessing those constituents requisite for a development *de novo* of the morbid virus, as is probably the case with cholera in India), the mediate action of the human body,—thus constituting an infectious disease. That yellow fever and other fevers of tropical countries depend, like cholera and dysentery, on the vegetation of fungous ferments, we have little doubt ; while we expect it will ere long be shown that many of our eruptive diseases spring from a like origin.

Even scabies, with its *acarus*, is probably an affection produced by the development of a fungus, on which the *acarus* feeds; just as we have seen an *acarus* feeds on ergot, and, as we think it probable, that the *aphis vastator* (Smee) does on the *Botrytis infestans*,—the fungus to which the potato disease has been ascribed.”

If we were to believe all we hear of the cholera, and to attach implicit credence to the various facts recorded concerning its progress, we must give up everything like an attempt to account for its propagation, and abandon ourselves to the hypothesis that the usual laws of nature have been suspended for the benefit of this scourge of mankind.

Thus in the Morning Chronicle of August 17, 1848, it is gravely stated, that “the cholera jumps over enormous spaces, and then retraces its steps, as if to repair the omission. *It runs down one bank of a river for several hundred miles, and never touches the other bank. It has dealt the same with streets.* In Paris it has happened that *all* the inmates in the upper and lower stories of a house lay dying, whilst *not a single person* in the middle stories felt ill. We have on record an instance of one side of a ship in the Madras Roads being struck by cholera, while the other side was untouched; nor did the men on the side not attacked by it afterwards suffer, although they attended upon their afflicted companions, and buried them; that is, threw them into the sea as they successively died.” In proof of the authenticity of this fact, the writer quotes Mr. Chalice’s pamphlet, who adopted the narrative from Colonel Rolls.

“*Quod nimium probat, nil probat,*” is a most salutary rule respecting evidence, and the application of it to that before us insures its rejection. What an accurate sanitary inquisition, and how laborious and expensive an investigation, were necessary to ascertain the strange manner in which cholera was limited by the above river. Whether both banks were equally inhabited,—whether one was populous and the other a desert,—

whether the river was straight in its course or serpentine, are matters of too little importance to be mentioned; but the one needful fact is asserted with all due solemnity,—that the cholera for several hundred miles was always opposite to, but *never touched the other bank*. Observe here the peculiar force and unhesitating exactness of *never*; it is only equalled by *all* the inmates of two stories dying, and *not one* of the intermediate story being attacked! It is only exceeded *by the one side* of the Madras ship!

Mr. Chalice has the kindness to add, by way of illustration, that the cholera is considered by the native Indian doctors to arise from animal miasma, consisting of migratory insects, analogous to those known as blights. “But this theory,” he continues, “has found no favour with the medical men of Europe, who, however, we rejoice to say, have at length decided, by an overwhelming weight of experience and authority, that the disease is not contagious. Science has its heroes as well as war, and its martyrs as well as religion.” So far the writer in the Chronicle. Let us now see how he proves his latter assertion. What hero does he bring forward, what martyr does he exhibit for our admiration? His following sentence answers this question: “More than one French physician placed himself in direct contact with a patient in the worst stage of cholera, in order to bring the contagion question to proof.” We may here discover something of the hero, but as the gentleman in question escaped unscathed, we cannot detect anything of the martyr. When such assertions as these, brought forward by the Chronicle, are gravely recorded in a leading article upon a subject of vital importance to the nation, we are almost tempted to hope that the writer was not an Irishman. But this writer, after all, to whatever nation he belongs, concludes the article in question with some more sensible remarks: “Mr. Chalice,” he says, “the author of the pamphlet entitled ‘Should the Cholera come, what ought to be done?’ gives the following advice on diet: ‘Good wholesome fresh beef and

mutton, with the best wheaten-bread, and a glass or two of good old port to those who have it or can get it, is what we recommend: at the same time we do not object to the occasional substitution of a roasted fowl or partridge.’” So far Mr. Chalice, as quoted by the writer of the Chronicle, who adds: “We see no objection to this advice, except that alleged, against advice of the same sort, by Mons. Louis Blanc,—‘That it was a farce and a mockery as regards the lower classes.’”

I may remark that the metropolitan papers, one and all, gave a very prominent place to somewhat similar advice which emanated from a still greater authority, viz., Mr. Wakley, the member for Finsbury, and coroner for London, who, on the occasion of an inquest held on the body of a person who died of English cholera, warned the public not to allow the Asiatic cholera to surprise any individual with an empty stomach, as each unhappy wight in such unwholesome predicament would become its instant prey. “A full stomach,” says Mr. Wakley, “and plenty of capsicum, are the best defences against cholera.” So that John Bull, evidently, no matter whether he has to fight a human, intelligible foe, or has to contend against an unseen and mysterious enemy, still relies on the national advantage of a full stomach. I have no objection to this mode of self-defence, although I foresee some difficulty in maintaining the stomach in the constant necessary state of repletion; but I must protest against the capsicum, which, being a powerful stimulant, will, if it be used to excess (as Mr. Wakley’s recommendation is very likely to induce ignorant persons to do), inevitably produce a tendency of blood to, and a congestion of the mucous membrane of the alimentary canal, that may facilitate the inroad of the very disease it is meant to defend it against.

It is scarcely necessary to record the strange phenomena witnessed by some of the British consuls, quoted by Lord Morpeth in his speech in the House of Commons; nor is it requisite to refute the connexion which one of these officials

supposes to exist between the appearance of hosts of caterpillars and the advent of the disease. Another dwelt upon the unusual heat of the weather; but this gentleman was evidently unaware that the disease had deliberately marched over the highest passes of the mountains in Hindostan, attacking travellers amidst the snows, and devastating villages at the greatest altitude, perhaps, that man inhabits, in the Bameean pass, between Caubul and Bokhara. Some, too, have chronicled most portentous and nauseous-smelling fogs, which have wrapped up the whole surface of the fated country as in a winding-sheet. But enough of these absurdities. Mankind, when alarmed, become credulous, and times of danger are always times of superstition. Reason ceases to reign when the fears or passions of men are excited. In connexion with the influence which poverty and the condensation of wretchedness have in producing disease, I may remark, that, however effectual such causes may be in giving rise to certain classes of fever, gangrene, erysipelas, or dysentery, yet they can never originate specific diseases. No matter how crowded people may be together,—no matter how wretched their condition,—no matter how bad the ventilation, even though it approached to that of the Black Hole of Calcutta,—still the combination of all these malign influences is incapable of giving rise to either measles, scarlatina, small-pox, hooping-cough, and, I will add, cholera. Had they been capable of producing cholera it would not have been of such recent date among us.

I cannot give my assent to the benefits that are supposed to accrue from opening the sewers and white-washing the houses in the poorer parts of cities. It is true that obstructed sewers give rise to disgusting nuisances, and soiled exteriors are offensive to the eye. But the causes of epidemic disease escape the scrutiny of both nostrils and vision, as is proved by the fact that the worst parts of most capitals of Europe, however abounding in all sorts of abominations, do not give rise to either typhus fever, or plague, or cholera. Filth is the outward

and visible sign of poverty, and, like poverty, is itself an evil; it oftener accompanies than causes disease; otherwise, as I have said, every capital in Europe would contain within its precincts many self-supporting manufactories of pestilence. I have been always of opinion that poverty is more injurious to health than dirt; that its prevalence entails disease—sporadic diseases—from many obvious causes, and increases the spread of contagious disease on account of the *entassement* or crowded state in which the poor necessarily live. If humanity strives, therefore, in its visits to the haunts of misery to prevent the spread of contagion, it must pluck the inmates from within those bounds, disseminate them over a larger space, where the same number that now inhabits rooms may occupy large houses, and may have the use of nutritious food. But, alas! this, the only true method of relief, will require something more expensive than the broom and brush; and those who are so loud in recommending open sewers and white-washes as sovereign prophylactics, will, perhaps, shrink from contributing their share of that poor rate, or money for relief, which alone can snatch the pauper population from the hands of the destroyer.

The observations of Dr. Cane on this subject are so much to the purpose that I cannot do better than quote them:

“ Now, not only should arrangements be made for adequate hospital care, and for extern visiting and prescribing in every locality, and made at once, but all those other measures should be at the same time looked after which tend to improve the condition of the poor. Officers of health should be empowered, as are market-jurors, to look after the character of the food of the people, to deal summarily with all venders of foul meat, and damaged food of every description. As example: unsound herrings, or other fish in a state of decomposition, articles of food exceedingly frequent in the inland parts of Ireland; the meat of animals, not slaughtered, but that have died of disease, commonly sold in Irish markets; unsound pork, or pork whose hair has been imperfectly removed—[The poor

always eat pork and bacon skin; I have seen such pork-skin prove the exciting cause, by producing mechanical irritation along the mucous membrane, its strong and bristly hair being brush-like. I remember it in one well-marked case of cholera; more recently I have seen the same cause produce ordinary vomiting and purging. Had cholera been here I have no doubt those cases would have been developed as cholera]; vegetables, when eaten in large quantity, or when stale, or when of a harsh description that will not boil softly, a state in which cabbage and greens are frequently eaten by humble people; cabbage stewed with fat, and all such greasy messes; all unripe fruits, sour milk when taken with oaten stirabout, flummery, porridge, or bad wet potatoes, are all liable to produce lax bowels, and therefore tend to the development of cholera in the individual, if exposed at all to its influence while the bowels are lax. Indian meal, which is now an article of common consumption in Ireland, has a decided tendency to cause loose bowels, if not judiciously dressed by suitable steeping and long boiling. Soup diets and all such fluid messes are also likely to create loose alvine discharges. Water should be especially looked after, to see that every locality was supplied by water that was of a pure and wholesome character: in a word, to see that no food, solid or fluid, no drink or water, was used by the people, the tendency of which, even though faultless in all other respects, was to create laxity of bowels.

“Next to the food comes the state of the sleeping apartments, bed and bedding, and clothing of the people. Wherever they are lying (as they are in many places) upon a thin layer of straw, directly upon a damp earthen floor, or with the rain dripping in misty moisture from the old and worn thatch,—where their bed-clothes, or day-clothing, are so meagre and scanty as to expose them to the risk of sudden arrests of warmth of surface and natural perspiration,—these are so many invitations for cholera to come and take its victims. Therefore, officers of health should at once have power and means, and be busily

looking after all these things; their efforts will come too late if they wait till the disease is on our shores. Clean straw, boards for bedsteads (though they were but planks laid on stones), blankets, and clothes, should be prepared for those in need of them. It will be money better spent than at a later period, to waste it in coffins and grave-yards. Everywhere it should be supplied by the authorities, and from the benevolence of the wealthy.

“ In addition to food, clothes, bedding, and housing, the state of the people’s minds is of great importance. They ought to be kept cheerful and free from alarm; everything calculated to depress mental energy predisposes to cholera,—the fear of cholera itself remarkably so; therefore in all classes of society, all ordinary and rational amusements should be encouraged. The spirit, as well as the body should be maintained, and thus will much of the evils of that fearful pest be avoided.”

The present is a particularly dangerous time to overlook the contagious nature of cholera; for the unfortunate likelihood of a dearth of food will render it necessary to provide means to assist in feeding the people, and if the same methods are employed as in the years 1846 and 1847, great numbers of the indigent and starving poor will be daily brought together for the purpose of being fed, and thus people in multitudes will be assembled, and to a certainty the contagion of the cholera will be disseminated far and near. In fact the same reasons that caused typhus fever to spread, and commit such dreadful ravages in 1846 and 1847 will produce a like effect with regard to cholera. In the above-mentioned years of public calamity, fever so fast followed on the footsteps of famine, that some persons thought the former was the natural consequence of the latter; whereas the unusual prevalence of fever in those years arose, not directly from the want of food, but indirectly, from the opportunity the contagion had of affecting persons brought together to partake of the measures of relief; and it is much to be apprehended that the same

connexion will be observed soon between famine and cholera as then existed between famine and fever. In truth, wherever large numbers of starving persons are collected to receive food, it is a mere matter of accident what contagious disease may become prevalent amongst them. It may be fever,—it may be plague,—it may be cholera,—it may be small-pox, if the nation consists chiefly of persons unprotected by vaccination, as occurred in the lamentable famine at Gujerat in 1812, when the small-pox broke out in the midst of the multitudes assembled for the purpose of receiving rice, and in a few months very nearly depopulated the country.

It is strange what a general disinclination has existed for some time in Great Britain to allow that diseases are contagious. The influence of capital has, for obvious reasons, been brought to play, and every expedient has been resorted to,—no matter at what danger to the public health,—to try to diminish the stringency of the quarantine laws, and thus remove the obstacles to trade. In furtherance of this object advocates have been found who did not scruple to advance opinions quite opposed to those hitherto received, and many treatises and books have been published to disprove the existence of contagion even in the case of plague. As to typhus fever, its non-contagious nature was by such persons supposed to be demonstrated, and the great majority of the physicians of England were non-contagionists. The Irish physicians, however, never supported this view of the subject, for, unfortunately, they had before their eyes daily proofs of the contagious nature of typhus. The events of last year have shown that the opinions of my Irish brethren were correct, and no one is now found who denies the contagious nature of typhus, for all have been taught by its transmission to America and Canada, that it is a portable disease, capable of being propagated by infection. Yellow fever affords another example in which the opinions of our predecessors were supposed to have been overturned by the investigations of modern observers; and almost all Euro-

pean and American physicians were united in believing that it was not a contagious disease, although the contrary had been maintained by the most eminent men of the last century. Doctor Stokes and I had an ample opportunity of observing a variety of typhus in 1826, which, in its symptoms and pathology, so manifestly agreed with yellow fever, that we could not entertain any doubts as to their identity. We were convinced, also, that the opinion of those who maintain that yellow fever is never contagious must be incorrect.

The circumstances which attended the breaking out of fever in the *Eclair*, and its importation, by means of that vessel, into the island of Bòà Vista, were so strongly indicative of its infectious character, that the latter is now generally allowed; and thus yellow fever is by this single instance taken out of the category of non-contagious diseases. I must refer the reader for an excellent article on this subject to the July number of the *British and Foreign Medico-Chirurgical Review*, where he will find an admirable analysis of all the facts that are detailed in the Reports of Dr. King and Dr. M'William on the circumstances attending the appearance of the fever at Bòà Vista.

The article in question is extremely able, and at its commencement the reviewer states that Dr. King's opinions respecting the contagion of yellow fever seemed to have been fully formed before he landed at Bòà Vista. He was, and is a decided non-contagionist, and believes that he has succeeded in throwing doubts on the fact of the importation of yellow fever into Bòà Vista, by the crew of the *Eclair*; and yet the reviewer relying altogether on the testimony of Dr. King, a non-contagionist, succeeds in proving incontrovertibly from Dr. King's facts, that the disease was imported by the crew of the *Eclair*. I look on it as of great importance that this review has arrived at such a result, because in the previous part of the same number it has given an able article "on the causes and diffusion of cholera," and has supported the conclusion

that cholera is not contagious. I take the liberty of submitting the following facts to the consideration of the reviewer, and only entreat him to use the same tests and the same method of reasoning that he has so successfully applied in the analysis of Dr. King's book, and I have no doubt he will see reason to change his opinion, for the example of the contagiousness of cholera I am now about to bring forward, is very similar in the circumstances which attended it, to those that followed the arrival of the *Eclair* at Bòà Vista. In truth, the coincidence between the two cases is very remarkable. There is this difference, however, that the evidence of the importation of cholera is, if possible, much stronger than that of the importation of yellow fever. The particulars of this case are given in the thirteenth volume of the *American Journal of the Medical Sciences*, p. 359, "On the Communicability of Cholera, by Professor S. Henry Dickson, M. D."

"On the 31st of October, 1832, the brig *Amelia*, bound to New Orleans, after a tedious and stormy passage from New York, having sailed on the 19th of the same month, was wrecked on the beach of a low and sandy island, about twenty miles from Charleston, far out to seaward, and offering a very scanty vegetation. It is regarded by its owner, Mr. Milne, as quite a healthy spot, and resorted to by him as an agreeable summer retreat, four of his negroes being left upon it as permanent occupiers. The brig had on board, besides her ordinary crew, 105 passengers, 102 of whom were crowded into the steerage. During the voyage, which was wet and tempestuous, they were much confined below, and when six days out became sickly. Twenty-four died of cholera on the way, and several were ill when she was stranded. The survivors were treated with the greatest humanity by the owner of the island, and took refuge in his buildings. The captain and one of the passengers came up to Charleston with Mr. M., and reported the affair to the municipal authorities, who promptly entered upon the measures dictated by a correct and liberal policy.

The deputy port-physician, Dr. Elfe, visited the island, and announced the nature of the disease existing there. A boat's crew of wreckers, who had gone down to the spot(a) *to pursue their usual avocation of saving the vessel and cargo*, having returned to the city, one of them was seized with cholera, and died in Elliott-street, under the care of Dr. Schmidt. His was the only case which I myself had an opportunity of seeing, and it appeared to me well marked, and clearly identical with descriptions now familiar to every one. The rest of the crew were ordered to the island to perform quarantine, and having embarked, two fell sick, and one died of cholera on the passage down.

“Two physicians, Drs. Jewey and Pritchard, were, in the meanwhile, sent thither to afford the requisite medical attendance upon the sick; everything necessary for their support and comfort being forthwith furnished as far as was in the power of our intendant and council, to whom all praise is due for their conduct on this occasion. As neither the brig's crew and passengers, nor the wreckers, an additional number of whom had now gathered about the wreck under permission of the authorities, were willing to remain on the island under quarantine restrictions, eighteen men from the city guard under the command of a lieutenant, were detained to perform the duty of a *cordon sanitaire* in confining them there. These men were stationed between 100 and 200 yards from the sick, but in going to and from the landing they were forced to pass much nearer the building of one of the kitchens, which was used as an hospital; nor was it possible to prevent them from communicating with the passengers who were dispersed over the island. After the lapse of a week, Dr. Hunt went down to relieve Drs. Pritchard and Jewey, who were worn out with continual and severe exertions. A reverend clergyman of the Catholic church, Mr. Byrne, with the zeal and devotion of his

(a) The avocation of an American is evidently *antipodal* to that of an English *wrecker*.

sacred calling, also visited the island, and remained to dispense the consolations of religion to the sick and dying.

“Now, let us see what was the result of this intercourse of a number of sound and healthy individuals with this infected vessel, and her diseased passengers and crew. Out of about 150 persons collected on the island, twenty-three died, of whom twelve were passengers landed from the brig. Of the *wreckers*, the first to visit the vessel, and the most continually employed about her, some were almost immediately taken ill after their exposure; one died in town, one on the way to quarantine, and in all *eight*. Of the *four* negroes on the island, *three* died, one child and two adults. Of the guard employed on duty there, every man was affected more or less with the symptoms of cholera, with the exception of the commanding officer; nine were reported as attacked seriously, and *one* died; who, as Lieutenant Knights assures me, had never boarded the brig. Of the three physicians employed, Drs. Jewey and Pritchard escaped all suffering, but that of extreme fatigue. Dr. Hunt reports himself on the 17th November, as attacked by cholera, but quickly recovered. I cannot help expressing here my sense of the merits of these medical gentlemen, whose humanity and ardour led them to renounce the comforts and enjoyments of home, for an imprisonment on a dismal sand-bank, exposed to much privation, and to special hazard of sickness. Their conduct does honour to their profession, and to human nature. Lastly, the nurse who accompanied Dr. Hunt was taken ill and died. This man had been employed a week previous by Dr. Schmidt as a nurse to the only person who had the disease in the city. He had been assiduous in his attendance, and almost constantly engaged in the application of frictions until the patient died. Thus, there were *thirteen* deaths among the few who visited the island and the wreck. Such as I have above stated are the simple facts; what are the reasonings and inferences fairly to be founded on them? I pass by all discussion of the *negative* circumstances of this re-

markable case, as irrelevant to the question before us. The city of Charleston escaped without suffering the invasion of cholera, although the captain of the brig and a passenger came up to town and communicated with the authorities; although the deputy port-physician returned home, after visiting, examining, and prescribing for the patients; although the crew of a wrecking boat violated the laws, and returned also for a short time to their homes, after boarding the stranded brig; although one of their number died in a very thickly-built part of the town; and although two or three of the individuals quarantined on Folly Island escaped to the mainland. I have no wish to subtract from the real weight and value of these circumstances. I rejoice to be led to the conclusion at which they clearly point, that like all other communicable diseases, cholera requires the concurrence of certain contingencies in order to give efficiency to its generating or exciting cause.

“ Nothing is better understood than that some undefined condition is requisite to the transmission of every malady, whether regarded as contagious or infectious. The most universal of all epidemics, even influenza itself, does not affect every individual within the sphere of its prevalence. Small-pox is not always taken by the exposed subject; nay, inoculation often fails, however carefully performed, and with the most virulent matter: and I appeal to every physician of reading and experience, if numerous instances of a similar nature have not come under his immediate cognizance. Thus, the man who died in Elliot-street, though visited by numbers during his short illness of a few hours, was happily a cause of disease to no one; nor did those who evaded the imprisonment of quarantine spread it in any direction. We are entirely ignorant of the concurrent conditions essential to the transmission of cholera, if it be transmissible; we know that they are not fulfilled in the above cases. The positive facts, however, I repeat, are worthy of the most serious consideration on the part of all who are anxious to arrive at the truth. Cholera

was unknown on our shores until the date of the unfortunate wreck of the brig *Amelia* on the beach of Folly Island. No local cause capable of originating such a disease is imagined to have existed on that island. Cholera prevailed at New York when the brig sailed from that port; the week before her departure fourteen deaths are recorded in the bill of mortality. Twenty-four of the passengers died of it on the voyage, and several were landed labouring under it. The first boat's crew of wreckers who boarded her were some of them attacked with the same pestilence which had prevailed at New York when she sailed, and of which her passengers had been ill and died. None of the other inhabitants of Charleston were seized in the same way, either at that time or afterwards: the conclusion is therefore irresistible, they received the infection from on board the brig. The doctrine is now established beyond a reasonable doubt, that cholera is importable."

Professor Dickson's account of the wreck of the *Amelia* exhibits the strongest evidence of truthfulness and candour, and its authenticity and correctness have been testified by various witnesses. The Professor deserves much credit for not hesitating to state some facts which apparently militate against his conclusion. Nothing that I can say is capable of adding weight to the arguments of Dr. Dickson, except my informing the reader that in 1832, the date of the transaction, the city of New York contained 220,000 inhabitants, and the deaths from cholera during the week previous to the sailing of the *Amelia*, amounted to fourteen. Let the reader apply the doctrine of chances (as explained by Professor Alison in a quotation from a treatise of Dr. Simpson's, in the preceding part of this sketch(*a*)), to this mortality, compared with that which occurred on board the ill-fated brig during the six days preceding her wreck, and which amounted to

(*a*) Old Series, vol. xvi. p. 379. See also this method of argument as originally applied by the late eminent and excellent Dr. Whitley Stokes, to prove the contagiousness of typhus fever.

twenty-four deaths out of 102 passengers crowded together, and placed under circumstances most favourable to the propagation of disease by means of infection. Let this calculation be fairly made, and the result will amount to a demonstration that cholera is contagious. Let the voyage of the *Amelia* be likewise compared with the sad registers of the mortality which fever caused in emigrant vessels from Ireland last summer, and in which typhus broke out among the passengers some days after they had sailed, and the similarity of the attending circumstances will be found so striking, that we cannot refuse to allow an identity of causes when all the effects are the same. With respect to the Irish ships, that cause is now universally admitted to have been contagion; and that same cause it was which produced the disastrous spread of cholera in the American brig.

ART. VII.—*Observations on the Fever of the Western Coast of Africa.* By THOMAS KEHOE, M. D., Assistant Staff-Surgeon, &c.

As it must be admitted that the fearful mortality among European settlers has prevented our opening up and exploring the whole of Western Africa, it becomes desirable that the experience of every medical man who has been in Africa should be recorded, so that from united observations it may be ascertained whether African fever essentially differs from that which prevails in these countries,—a disease under different laws, and requiring a different treatment; or whether, though the type varies from any of our recognised forms, there is in reality no essential difference, so that the experience of Europe may be brought to bear on the treatment of African fever(*a*).

(*a*) It is curious how little is known respecting the west coast of Africa, considering that it lies within sixteen days' steam-voyage of England; although

For myself I believe that tropical fevers do not differ essentially from those of temperate climates; and that, in a modified form, the same rules of practice will be found to apply as to similar symptoms occurring in the fevers of Europe. Though I do not pretend to have established a decidedly rational mode of treatment, yet I am convinced that the African fevers and those of Europe are essentially the same; and that the symptoms which in Europe require treatment most carefully diversified, according to the constitution, the type of the prevailing epidemic, &c., do not in Africa require the one unvarying mode of treatment—the exhibition of mercury so as to produce salivation.

I do not mean to assert that the treatment of fever by the indiscriminate exhibition of mercury has been universal on the coast of Africa; many medical men have not adopted it; but it certainly has been the general method. Nor has this supposed necessity for mercury been confined to fever; in many other diseases it is given in large quantities, when it either would not be given at all in Europe, or exhibited with great precaution, and in much smaller doses. In venereal, for instance, I was assured I should find it absolutely required in every case;

the country produces in unlimited quantities the most valuable tropical productions; and the people, though we call them savages, are sufficiently civilized to be anxious to trade with us, and obtain our manufactures, and have articles of primary importance to us, in unlimited quantities, to give us in exchange. The value of our imports from the west coast of Africa is now nearly a million and a half, and if the country were opened up to British enterprise, there really appears to be no limit to the trade which must result. While I believe it is to commerce we must ultimately look for the civilization of the African, it appears to be utterly utopian and absurd to expect to introduce generally throughout Africa any portion of our civilization, from our present settlements on the coast. It is questionable if one country ever adopts the civilization of another, or if civilization ever can be of foreign growth; but if, by means of commerce, we give a people new ideas, and the perception of new wants, and stimulate them to gratify those wants by their own industrial efforts, we may hope that they will gradually civilize themselves.

yet I employed it in precisely the same manner as I would have done in Europe. In affections of the liver, spleen, &c., the same observation applies; and I believe that, though the constitution or the disease may be modified by climate, there is no essential alteration produced in their nature by it.

To enable us to understand Sierra Leone fever better, let us for a moment consider the character of the country. It lies in $8^{\circ} 29'$ north latitude, $13^{\circ} 14'$ west longitude. As it is approached from the sea it realizes all that we could have imagined of tropical scenery; even the famed Blue Mountains of Jamaica are not so lovely as Sierra Leone. The town lies in an amphitheatre, surrounded by mountains gradually rising in the back ground to the height of 4000 feet, and clothed with all the vegetable profusion of the tropics. The hill on which the barracks and some other public buildings are situated is barren, and almost red from ferruginous matter; but it only serves to set off the deep verdure of the back ground. To the extremity of our settlement, about forty miles down the coast, where it gets more tame and level, the scenery is the same: mountain rising over mountain; trees with foliage of every hue; at every few miles reaches of silver sand, with the magnificent silk-cotton trees towering round them; or little bays, whose singular beauty is strangely opposite to the remembrances their names call up,—Dead Man's Bay, Pirate's Bay, &c.

But the position of Sierra Leone makes it peculiarly unhealthy, even beyond most other spots on the coast. A tropical sun draws up a vast body of water from the sea: the mountains which surround the town prevent the free current of air; so that the damp, heavy atmosphere remains lodged over the settlement. The air, already saturated with water, cannot carry off the moisture from the body, and thus the European is bathed in perspiration on the least exertion. Even in the dry season all steel instruments are at once rusted, and articles of clothing, if not worn, become mouldy in a few

days. In walking to the barracks from town, even in the middle of the night, perspiration used to stream from us like water. In fact, with this state of the atmosphere, a vertical sun, and the thermometer at 84° in the shade, the European inhabitants are, as it were, in a continual vapour-bath.

One effect of the climate is to produce great excitability of the nervous system. Of this nearly all are conscious in their own persons; the temper becomes irritable, and a languid, yet excitable state is commonly produced.

Four varieties of fever seem to prevail on the coast of Africa:—

1. Common intermittent.

2. Irregular intermittent, or “fever and ague,”—the mild bilious remittent, or common remittent of the country; for it is known by all these names.

3. “The seasoning fever,” or severe bilious remittent, which attacks nearly all persons from temperate climates in their first or second year of residence, not one in a hundred escaping.

4. The epidemic fever, which fortunately rages only at intervals of some years, and which appears to be a variety of yellow fever. This I have not seen.

The intermittent differs from the ague of other countries, chiefly in the stages not being so well marked. In many instances a person will go about without having any regular fit of ague, but with merely a sense of chilliness or discomfort, or a creeping sensation down the spine, which, in some instances, is so severe, that the patient feels his spine like a bar of ice. This, in a severe form, seems to constitute the fever and ague, or common fever of the country, to which natives or old residents, or persons coming from other tropical countries, are liable. Nor is it easy to draw any line of essential distinction between this and the seasoning or severe bilious remittent which attacks natives of temperate climates, but from which they suffer only once; while the epidemic appears to be but the aggravated or malignant type of the latter.

It is, however, certain that a person is seldom, if ever, attacked a second time with the seasoning fever, while he is not only liable to repeated attacks of intermittent, but when the epidemic prevails he is liable to be attacked with it even while recovering from the seasoning fever. This would lead us to suppose that there was something essentially peculiar in the seasoning or severe bilious remittent; but when we come to compare its symptoms with those of other forms, we find it difficult to point out any positive difference.

The symptoms of the "fever and ague," or irregular intermittent, are frequently as severe, if not more so, at the commencement of the attack, as those of the seasoning fever. But while the seasoning fever runs a course of from five to fourteen days, too frequently with a fatal termination, the fever and ague, no matter how severe the symptoms may be at first, is amenable to treatment, and the course of morbid action is easily broken through. I have not allowed any case to run its course uninterrupted, but from what I could ascertain from the native nurses and others, the fever will generally terminate on the third day. But unless the system be strengthened against the morbid aguish impression, the patient will be subject to frequent attacks, varying in every degree of intensity, but gradually weakening the system, and laying the foundation for visceral disease. A tendency to morbid action is established, which is often with great difficulty broken through, and in many cases renders a return to a temperate climate necessary. The native mulattos suffer severely, and the size to which their spleens are enlarged is often enormous; I do not remember seeing a single mulatto child who had not an enlarged spleen.

I believe it will be found that intermittent fever, in its regular types, is a comparatively rare disease in Africa; but that every shade of fever, from the slightest to the most severe, assumes an intermittent or remittent character, and that the morbid impression is markedly on the nervous system.

Inflammatory or typhus fever is comparatively rare, though, of course, local inflammations and typhoid symptoms occasionally occur.

It appears to me, though I do not consider the fact established, that persons who have had fevers in other tropical countries are only attacked with the milder variety of African fever. Our military force at Sierra Leone consists of about 200 black troops, officered by Europeans. The officers are changed every year; and I believe that, with very few exceptions, they have been previously in the West Indies; they are also favourably circumstanced as to barracks, &c., at Sierra Leone. Though many are attacked with fever, and they have not unfrequently to be invalided, the mortality among them is very trifling. The medical officers, and those of the civil service, who go out from England, not having been previously in a tropical country, suffer in a much greater proportion. Among the persons I attended at Sierra Leone there were natives of the West Indies, and though the cases set in with symptoms sufficiently severe, they proved to be merely the so-called fever and ague, or common fever of the country. The first case I will narrate was that of a young woman, a mulatto.

—, æt. 22, of rather delicate habit; about a fortnight in Sierra Leone, from the West Indies, *via* England. She was attacked with nausea, intense headach, pains in the limbs, and shivering, quickly followed by intense heat of skin; her eyes were injected; her countenance looked puffed and swollen; her tongue flabby and white; pulse 104. She first complained early in the morning, having been in the night slightly delirious. I saw her on the following morning, and so much was her countenance swollen and altered, that I supposed her to be a person of at least forty years of age. The skin was intensely hot, the pulse rather weak, and the nausea still continued. She immediately took an emetic, and the body was kept constantly sponged with lime-juice and water.

Now here was an attack setting in with considerable violence; yet the emetic and the cold sponging were alone sufficient to arrest the course of morbid action. In the evening she was much better, but there was still some heat of skin, an uneasy sensation in the spine, and considerable nervousness. She took a pill composed of a grain and a half of opium and four grains of calomel at night, and a mild aperient in the morning, and required afterwards but a little quina to establish convalescence. She, however, resided in a marshy situation, and frequently had similar attacks of a more or less severe character. Had those symptoms been the commencement of an attack of seasoning fever, the course would have been very different; yet it would be difficult to say in what they differed from those of the severe bilious remittent, except that the cold stage was more marked, and the symptoms, perhaps, more intense than they usually are at the commencement of fever of the more severe grade.

Two other cases of a similar character occurred in officers, born in the West Indies, of European parents. On coming to Sierra Leone they had exposed themselves to sun and rain at all hours of the day, without the slightest precaution. They were both attacked with fever: the symptoms were very threatening at first, but yielded without trouble. One who resided at Tower Hill, in an elevated position, had no return of the attack. The other, who resided in a low and marshy situation, had frequent attacks, some of them exceedingly severe. In these cases the heat of skin was so intense, having continued in one instance for thirty-six and in another for forty hours before I saw the patient, that I considered it advisable to use the cold affusion, and then to promote perspiration by bed-clothes, warm drinks, and the use of quina and opium. Full perspiration was quickly brought on, with complete relief, though previously to the cold affusion all endeavours to produce it had failed. To the use of the combination of quina and opium, and the circumstances under which it

may be given with safety, I shall again refer. I believe that in certain stages of African fever, after vascular excitement has been in some measure subdued, and in those cases which are uncomplicated with local inflammations, it will be found to fulfil the indications for treatment better than any other means which can be adopted.

I shall next consider the seasoning, or severe bilious remittent,—“the African fever.” It is this which is endemic on the coast, which has principally caused the fearful mortality that has always prevailed, and made the western coast of Africa proverbial for its fatality. Medical men, who have had the opportunity of observing it, appear to be as undecided about its nature at the present day as they were at first. Is it an inflammatory fever? Is it an adynamic or ataxic fever? Dr. Copeland tells us: “The inflammatory remittent, the bilious inflammatory, the adynamic or malignant remittent, and the ardent, or seasoning fevers of Europeans lately arrived in warm climates, are merely modifications of each other, and differ essentially from epidemic yellow fever, with which, however, they have been all most singularly confounded.” In conformity with these views he directs that we should bleed when vascular excitement is established, and repeat the bleeding if it be not subdued by the first venesection.

Mr. Boyle, who, as Colonial Surgeon at Sierra Leone, had more extensive opportunities of observing the disease than any other person, tells us: “In its character it much resembles that of the bilious remittent of the East and West Indies, which I have been accustomed to see; but in the treatment the following contrary results are observed, namely:—first, that on the coast of Africa patients do not bear the loss of that quantity of blood, which, by proper after-management, acts almost as a specific in the former countries; secondly, that the early appearance of convalescence is an infinitely less favourable criterion on the coast of Africa than it is elsewhere; and thirdly and lastly, that the degree of debility attendant on

patients recovering from this fever is decidedly grèater than it is in other tropical countries." That patients do not bear loss of blood in "African fever" is now almost universally admitted. Boyle tells us: "Among a great many fever cases under my care were seven of the crew of the *Thomas Gelston*. I bled six, in whom the febrile symptoms were most marked. In the end the whole seven died, but the most delicate, the one not bled, outlived the strongest of the others for the space of about twenty-four hours." "In another instance, thirty-five men of His Majesty's Ship *Plumper* were sent to hospital; twenty-nine are now dead, two in danger, and four in a state of extreme debility."

Such instances,—and I believe the experience of every one who has treated fever on the coast of Africa can bring forward similar examples,—seem to decide the question of bleeding, and to establish that, on the coast of Africa at least, the seasoning fever of Europeans is not an inflammatory fever, and will not bear active antiphlogistic treatment. Boyle endeavours to establish a difference between what he terms climatorial fever and local remittent fever,—that the former will bear bleeding, but the latter will not. The persons affected with climatorial fever he considers to be principally the seamen in our ships of war on the coast, who have not been exposed to local influences; but he admits that even these do not bear bleeding well, while persons attacked with the disease on shore could not bear it at all. "Patients who could bear the loss of fifty or sixty ounces from the arm with the greatest advantage in the East and West Indies and Mediterranean, at one blood-letting, would faint on losing from twenty to thirty ounces on the west coast of Africa." He therefore admits that, even in the "climatorial fever," blood-letting should be used with caution. It may be at once admitted that the loss of from twenty to thirty ounces did less mischief than the loss of from fifty to sixty ounces. I quote Boyle, because he had the opportunity of observing the season-

ing fevers of various parts of the world, and therefore is not liable to the objection which applies to Dr. Copeland,—of drawing general rules from merely local experience, and who was, moreover, at first prejudiced in favour of bleeding.

It seems, therefore, that there is no essential difference between the two forms of fever Boyle seeks to establish. That seamen on board the ships of war, who are least exposed to the coast influences, and, therefore, we may suppose, get a “smaller dose” of the paludal poison, have their vital powers less prostrated, and are able to bear up against a more active treatment than those who contract the disease on shore, is sufficiently probable.

The mortality among seamen on board merchant vessels, exposed, at the mouths of the rivers, to the full power of all deleterious influences, is frightful: whole crews are, in some instances, swept off; vessels are abandoned, or with but one-third or one-fourth of their men, are at length, with the assistance of the natives, brought into some port. Yet if a mercurial treatment be the treatment for African fever, few ought to be lost, for a tea-spoonful of calomel given by the captain, and repeated, at his good pleasure, till the patient be better, or—which is the more common result—dead, is the usual treatment. An absence of all treatment, however, is not found to have more satisfactory results, and so sailors in despair have recourse to the calomel.

Yet it must be admitted that the opinion of almost all practitioners on the coast is in favour of mercury; and when we find their opinions agreeing with those of Chisholm, Denmark, Johnson, &c., the evidence in its favour certainly becomes very strong. But we must also remember that it is not so long since fever in Ireland was treated by full venesection; that mercury, pushed to salivation, was also constantly considered necessary; while another class of practitioners, another school, utterly disregarded all vascular excitement, and poured in their wine, bark, &c., from the very first. Now,

a change having taken place in the opinions of medical men in this country as to the treatment of fever, it is not improbable that a similar change may take place in medical opinion as to tropical fever; and that the symptoms of each case will be considered, and not any supposed special condition of the system, as indicating the general employment of some one heroic remedy.

Dr. Copeland doubts the generally beneficial influence of mercury, except in the epidemic yellow fever. But it is in this that Rush is so convinced of its efficacy; and as mercury got a full trial in the hands of the skippers, so blood-letting certainly did in his. The amount of blood-letting in his cases appears awful in these modern times, and yet it is not so long since 1794. "John Madge bled twelve times to 150 ounces; Mrs. Rapper, eleven times, to 140 ounces; the Rev. Dr. Magan's maid, ten bleedings to 100 ounces; Mrs. Fius, fifteen bleedings to 150 ounces. Mrs. Gavin objected to a fifth bleeding, and died for the want of it. Her death was ascribed to the frequency of the bleedings by the enemies of the depletion system. Mr. Marr died after six bleedings; he might have been saved, humanly speaking, by one more. Mr. Montford, of the State of Georgia, was cured by plentiful bleeding and purging, but died in a fainty fit."

The list of the advocates for mercury is unquestionably a very large and respectable one; but, independently of the fearful mortality which follows its employment, there is a large amount of evidence against it. When our troops re-embarked after the capture of Batavia, Mr. Wade gave from twenty-four to thirty-six grains of calomel in the twenty-four hours, till salivation ensued. Some remission then followed; but no sooner did the gums heal than the patients died, almost to a man.

Dr. Daniel gives a case of a patient labouring under profuse salivation being seized with remittent fever when the salivation subsided. The fever terminated in eight or nine days, and the salivation returned in all its force, with mercurial fetor,

swelled salivary glands, tongue, &c., though no mercury had been given after the accession of the fever. He is of opinion, therefore, that mercury given to produce salivation in fever inflicts a real injury on the patient, for, as long as the febrile action is violent, the mercurial action does not take place, and it keeps the patient low and weak after the fever has subsided.

Let us now consider what are the symptoms of the fever which has produced such fearful mortality; and first, the appearances which are observed on *post mortem* examinations. *The substance of the heart is frequently flaccid, soft, and easily torn.* The changes within the cranium consist chiefly of congestion of the veins of the pia mater and sinuses, with a fluid dark blood, and sometimes of effusion into the ventricles and between the membranes. The liver is often softened and congested; the spleen, in some instances, like a mass of dark blood. Inflammatory patches in the stomach and duodenum are not very unusual. I have examined the record of a vast number of cases; in the far greater number the *post mortem* appearances bore no relation to the symptoms during life. In many no morbid appearances whatever were to be discovered. Dr. Robertson gives, amongst others, the case of a man named Collins, first attacked on the 15th instant; he had intense heat of skin and delirium; the pulse became small; on the 18th convulsions supervened, and carried him off. The *sectio cadaveris* showed not the slightest deviation from a normal state in any of the viscera. In certain cases, however, acute inflammation of the membranes of the brain has been found after death. It would certainly seem that a treatment must be required in these, different from that in cases marked merely by a prostration of the vital powers, and that the antiphlogistic treatment and mercury, useless, or worse, in the latter, would here be required. Again, in those cases in which inflammation of the mucous membrane of the stomach and duodenum is found, it is difficult to understand how general depletion or mercury can have a certain effect, but very

easy to understand how wine and bark, given with the object of supporting the strength or combating the remittent action, may do vast mischief.

It is to be remembered, however, that in the far greater number of cases no organic lesion is found after death.

In what then does Sierra Leone fever differ from the fever of the British islands? The duration of both is about the same; there is no inflammation or lesion of any organ necessarily present or characteristic of either; in both there is a tendency in particular organs to take on inflammatory action; and there is in both a something essential. In this country the lungs are often engaged; in Africa the liver. But that is only what might *a priori* be expected. We know that the lungs perform comparatively little duty in tropical countries; the liver, vicariously employed in getting rid of part of their carbon, suffers for its double work. The heat of skin, moreover, is generally much more intense than it ever is in this country; and those who look on fever as essentially an inflammation of the skin might here find a corroboration of their views. But the skin as well as the liver, acting in some measure vicariously, and performing double duty in the tropics, is also liable to diseased action. With respect to inflammation in the alimentary tube, we know how it varies in the fevers of different European countries, or in different epidemics of the same country. African fever in general assumes a much more decidedly remittent character than fever in Europe, but in all cases of fever there is more or less remission, and in some of those I saw in Africa the remission was very slightly marked. In Africa, perhaps, the morbid impression is more decidedly made upon the nervous system than in the fevers of Europe. The *severe* bilious remittent seldom, if ever, affects a person more than once, but the same is said to be the case with the genuine typhus of Europe.

The symptoms of the "severe bilious remittent" do not differ materially, at first, from those at the commencement of

fever in this country. A person feels chilly and uncomfortable, with pain in the back and limbs; followed by nausea, head-ach, quick pulse, and hot skin. The intensity of all these symptoms varies, of course, in different cases. In some the rigor is well marked, in others trifling; the nausea is very distressing; the headach generally very severe; the heat of skin almost constantly intense, so as to give a tingling, almost painful sensation to the fingers laid on it; the face often looks bloated; the eyes are generally injected, and have a heavy, stupid look; the conjunctiva is sometimes yellow. The tongue white and flabby, very rarely dry and hard, or marked with a red streak in the centre; sordes on the teeth are very rare; the skin varies from a slightly dusky tinge to a deep yellow. When vomiting takes place it may be bilious, or the fluid be mixed with patches or shreds of membrane, or in a few cases like coffee-grounds; the urine is said to be copious; in the cold stage it is scanty and high-coloured, sometimes of a lemon colour. In the after stages the patient is generally heavy and stupid. I have not seen any cases in which there were sordes on the teeth, or the red patch down the centre of the tongue, or in which the matter vomited was anything more than bilious fluid. In one case, in which there was great irritability of the stomach, with constant vomiting of dark bilious matter, and hiccough, the tongue was dry and rough in the centre. In another case, with deep lemon-colour of the skin,—the only one I saw,—the tongue was dry, hard, and as if shrivelled. In two cases, the eyes, instead of their usual heavy congested look, were bloodshot, and with a wild and threatening expression: the pupils seemed somewhat contracted. In these two cases, the manner instead of being heavy, stupid, and indifferent, as is usually the case, was hurried and excitable; one who had the slightest delirium—a very slight wandering—died with decided symptoms of disease of the brain, rigidity and tonic spasm of one side of the body. The other cases recovered.

Are persistent irritability of the stomach, a dry, clean tongue, or with a red patch down the centre, and more or less tenderness of the epigastrium, sufficient to mark gastro-duodenitis, and to direct our treatment accordingly? Do the bright or threatening eye, with ever so slightly contracted pupil, and the excited manner, point out commencing inflammation of the brain or meninges, and require treatment directed to combat it? And are the absence of these two sets of symptoms sufficient to warrant us in concluding that there is no inflammation in those organs?

One of the peculiarities of all severe forms of tropical fever is the occurrence of death without any severe symptoms. Louis makes mention of it in the yellow fever of Gibraltar; indeed all writers on tropical fever record such cases. One of the first cases of fever I treated at Sierra Leone was of this kind. A French sailor, æt. 30, a strong, muscular man, was landed, after having been six or seven days ill at sea. When I saw him he was sitting upon the side of the bed. His eyes were slightly congested, with rather a wild expression; his skin dry and hot, but not intensely so; his pulse 90, rather feeble; his tongue white and tremulous; he had constant vomiting of whatever fluid he drank, and occasionally of bilious matter; he had no pain in the head; no delirium; answered every question perfectly rationally; and thought there was very little the matter with him. Three drops of hydrocyanic acid at once allayed the vomiting. I ordered him to be sponged with lime-juice and water, and to have a stimulating injection, as his bowels were confined. On my seeing him in the evening, I found he would not allow himself to be sponged, or to get the injection; he complained only of his bed feeling hard and uncomfortable. As I thought his manner more excited, though he still answered all questions in a perfectly collected manner, I now repeated my directions, with the addition of a blister to the back of the head. On my visit in the morning, I found he had died during the night. It appeared from the statement

of the nurse, that he had become excited at the idea of his head being shaved for the blister; he got up, walked about the room for a few moments, lay down on his bed, and died.

His companions would not allow a *post mortem* examination, but it is not likely that anything would have been found to account for death. The irritation of the stomach was easily allayed, the head symptoms were trifling, though threatening more mischief; the pulse was feeble, but still there was apparently no sinking of the powers of life. What then was the cause of death?

This case, as it was one of the first I met with, made me fear that I should find no positive indications for treatment; and that I might lose cases in a similar way without seeing anything to guide me in practice; but this was the only case of the kind I met.

I had several cases under my care from two vessels, one in the timber, the other in the ground-nut trade. They had both been lying for a considerable time at the mouths of some of the rivers, and before putting into Sierra Leone had lost several hands by fever. The symptoms in all were nearly the same. The disease had lasted from one to five days; in most of the cases there was considerable nausea; the face looked swollen; the eyes were congested and stupid-looking; the patient's manner heavy and indifferent; the tongue flabby, white, and generally tremulous; there was a sense of heavy weight or pain in the head, in many there was slight delirium and wandering, but this appeared to bear no proportion to the pain or sense of weight in the head, as there was delirium without any uneasiness in the head, and, on the other hand, pain without any delirium: some complained of uneasiness in the spine or in the limbs. In every instance there was increased heat of the skin, in some amounting to the calor mordax; in all it was very considerable. The pulse ranged from 90 to 120; its general character was soft and compressible. There was little or no tenderness in the epigastrium; in some the skin was dusky, but in none was it

yellow; there was no bright or wild look in the eyes, nor were the pupils at all contracted, perhaps rather the contrary. The symptoms did not appear very formidable, yet it was, no doubt, with similar symptoms at first that their shipmates had perished at sea.

I had now to consider what treatment I would adopt. Evidence appeared conclusive against bleeding; the results of the mercurial treatment did not appear to be much more favourable. Purgatives, blisters, and general antiphlogistic treatment at first, with wine and tonics at a later period, had formed part of all other modes of treatment, and, therefore, had, in some measure, failed along with them. Quina had been tried from time to time in African as well as in all other tropical fevers, but, though it had met with a certain amount of success, there was not sufficient evidence to give confidence in its use. The most favourable report of it is from M. Maillot, surgeon of the French army in Northern Africa. He gave quina in every stage; twenty grains at a dose in the incomplete remission. Under its use the deaths, in proportion to the admissions, decreased from one in nine in 1832, and two in the nine in 1833, to one in twenty-two in 1844–45. But in Sierra Leone the same success had not attended the exhibition of quina, and mercury alone was held in any confidence. Nor did the cases appear to me to be such as would yield to the use of quina.

I had, however, positive indications for treatment. There was nausea—an endeavour, as it appeared, to get rid of some offending matter—without tenderness at the epigastrium, and with a soft, white tongue. In all such cases an emetic was given, and the patient, as far as possible, made to drink tepid water, so as to clear out the stomach. There was increased heat of the skin; where this was trifling, the body was frequently sponged over with lime-juice and water; where it was intense I had recourse to cold affusion. The patient was taken out of bed, and two or three gallons of water poured over the body. In some instances, where there was evident affection of

the head, I poured water from a large jug on the vertex. This was repeated twice a day, and the lime-juice and cold water used in the intervals, whenever the skin became hot. Cold water was allowed to be taken freely for drink. In some cases four or five grains of calomel were given at night, with a mild aperient in the morning; in others, where I was afraid of irritation, the bowels were opened by enemata. A certain amount of relief was derived from this treatment, but still the heat of skin constantly returned shortly after the cold affusion or sponging, and no decided impression appeared to be produced on the disease; the pulse continued feeble, the tongue coated and tremulous, and the vital powers did not seem to rally.

The symptoms now were, low delirium or wandering; a tremulous, coated tongue; a weak pulse, generally very soft and compressible; a dry and hot skin. Wine had always been given in such cases, but the great mortality which had always occurred showed that the power of wine was limited. It might support the powers of life, and enable the constitution to struggle through the disease, but it possessed no power to control the peculiar state of the system which produced the remittent febrile action, to allay nervous irritability, except secondarily, or to produce a healthy action of the skin, whether its morbid heat and dryness be considered to proceed from spasm of the capillaries or not. A combination of quina and opium, in full doses, would fulfil these indications, nor did I see anything in the state of the brain, or any other organ, to contra-indicate its use in this class of cases. I have found this combination of quina and opium, when given in full doses—for otherwise it is nearly ineffectual—of extraordinary benefit in allaying nervous irritability and supporting the vital powers in several diseases. I have seen the unhealthy ulcers of venereal rupia heal almost magically under its use, and suppurating wounds and sores of various unhealthy kinds take on healthy action. The influence of

opium in supporting the vital powers is universally recognised as well in health as in disease, and its influence in breaking through the chain of morbid action which constitutes intermittent fever is known to be second only to that of quina, while it has been recognised as useful in many cases of bilious fever.

I expected then that opium would allay nervous irritability and promote the healthy action of the skin, and that quina, *where not contra-indicated*, would support the vital powers and exert the specific influence we know it to possess on that peculiar state of the system which is produced by the paludal poison. I therefore gave a grain of opium and two grains of quina, in a pill, every four hours; afterwards, in many cases, I gave it every second hour. There is no danger of too much opium being given, for the patient usually falls asleep after a very few doses, when, of course, he is not to be disturbed, and the intervals can afterwards be lengthened according to circumstances; but I believe it is best to continue it pretty freely till convalescence be established. As long as there is the least heat of skin, the cold affusion and sponging should be employed. I doubt whether the treatment by quina and opium would be found safe, without a free use of the cold affusion and sponging: the latter should be used energetically, at least until they had fulfilled the object for which they were employed. The cold affusion being employed to reduce the heat of skin, if this be not effectually and permanently done, little or no good will be derived from it. Sometimes, in a few moments after the use of the cold affusion, the heat of skin becomes as intense as before it was employed. In such cases the person should be placed sitting in the bath, and cold water dashed over him till a decided effect be produced, but not prolonged so as to cause shivering.

The temperature of the water may be lowered in some instances, or salt water may be used, but common spring or running water will generally be found to answer; for though

the temperature of the water is really high, the shock to the system is, probably, as great as that caused by colder water in temperate countries. Though the bath is the great luxury of the tropics, a person often shivers on going into water that he would consider almost tepid at home.

My experience in this disease is limited. I saw altogether but twenty-seven cases of the seasoning or severe bilious remittent fever. Out of this number there were only six to which this treatment by cold affusion and quina and opium did not seem applicable. I am aware that there is nothing more likely to lead astray than to attempt to draw general rules from a limited experience; and that in Africa as in Europe the character of the fever will vary in different years, and be modified by various circumstances. But, as far as my experience goes, this treatment will be found applicable to the greater number of cases of seasoning or severe bilious remittent fever. It also possesses this advantage, that cases treated in this way are not left in the state of great weakness which they often are after convalescence under other circumstances. When I adopted this method of treatment, I was not aware that it had been tried before, but I have since found out that a similar method has been long in use; for I find it mentioned by Rush—who, however, mentions it to condemn it—that a Dr. Kuhn gave a decoction of bark in clysters, with fifty drops of laudanum every four hours, and used cold affusion. This treatment he learned from Dr. Stephens.

I do not think it necessary to narrate a great number of cases most of which resemble each other; the following is a fair example:

August 13th. James Williams, seaman, aged 26, of full habit; three days ill, attacked at first with cold and shivering, pains in his back and limbs, and “bad headach;” had a dose of calomel on board, which purged him; his eyes were injected and heavy; his face looked swelled and stupid; his manner is sullen and indifferent, so that he can scarcely be

got to answer questions; tongue white and flabby; pulse 108, compressible; skin intensely hot; nausea. Ordered an emetic immediately, and, when its operation was over, the cold affusion, and the body to be kept sponged during the day with lime-juice and water. At the evening visit, I found that the emetic had acted freely, but some nausea still continues; skin intensely hot; and other symptoms unaltered since the morning visit; there is slight tenderness of the epigastrium. Cold affusion repeated; six leeches to be applied to the epigastrium, followed by a blister, and a draught with two drops of hydrocyanic acid.

14th. Nausea ceased, other symptoms continue the same; did not sleep during the night, and there was slight delirium; answers questions in a perfectly collected manner, but appears unwilling to exert himself to do so; cold affusion to be repeated in the evening, and sponging during the day; to have a pill with a grain of opium and two of quina every two hours; and some chicken broth. At the evening visit he had taken three pills; seemed inclined to sleep; symptoms unaltered.

15th. Had two more pills during the evening and night, and one this morning; had slept, but not very soundly, during the night; passed water, which is not so highly coloured as before; skin inclined to partial perspiration, but still intensely hot and dry generally over the body; cold affusion and sponging as before; to have a pill every third hour; chicken broth. He went on very favourably during the day; tendency to moisture of the skin increased and the heat diminished.

16th. Is not so well; no moisture of the skin, which is intensely dry and hot; general restlessness and some nausea; tendency to subsultus. Same treatment continued; cold affusion freely used; pill every second hour; chicken broth; four ounces of wine.

17th. Better again to-day; slept during the night; skin less hot, and inclined to perspire; pulse 96. To continue cold affusion, wine, and chicken broth; pill every three hours.

From this period he went on gradually improving; the skin became cool and moist with gentle perspiration, and, in a few days he was quite convalescent.

The increase of fever on the 16th showed the tendency to remittent action; but in the greater number of cases no marked remission will be observed. In this case there was no marked crisis, nor did I observe it in many cases; nor was there any profuse perspiration. Under the use of the quina and opium, conjoined with the cold affusion and sponging, the skin in most cases, as in this, becomes gradually cool and moist, with slight perspiration, but without profuse sweating.

After my own recovery from fever I suffered from the most profuse perspirations; not only were my sheets, but even the bed were wet from it: on some nights I have had to change my shirt twice during the night. The perspiration had a very heavy, unpleasant odour. As all the cases of severe bilious fever I treated, with one doubtful exception, were in seamen, I lost sight of them almost immediately on convalescence, and cannot say whether they suffered afterwards from the profuse perspirations. In my own case they did not commence for several days after convalescence. Many persons at Sierra Leone told me that they had suffered from these profuse perspirations after convalescence from fever, and I believe that they are common.

The following case presents no particular feature, except in the age of the patient.

James Wilson, an English sailor boy, æt. 14, ill five days; had vomited, but the vomiting had ceased; intense heat of skin, giving a tingling sensation to the fingers; tongue white and coated; eyes injected and heavy; muttering delirium; pulse 104, compressible. The poor little fellow, even when roused, appeared not to have the slightest consciousness of where he was, but talked of his mother and playfellows in England, and “babbled of green fields.” His black nurse, who seemed to be touched with some compassion for him,—rather an unusual peculiarity,—assured me “him go die—nothing no

good," and appeared excessively disgusted at my ordering him to be taken up and deluged with cold water. Two or three gallons thrown over him restored him to consciousness for the moment. I then poured about half a gallon, in a stream, from a large jug, with moderate force, on the head, which restored him to perfect consciousness. (Any one who has ever seen this sudden awakening to consciousness will not readily forget the look of pained, bewildered, questioning surprise, the mind struggling through its mists, and probably thinking the black faces and the white man pouring water, must be a dream.) He now got a pill with half a grain of opium and two of quina every two hours; the cold affusion was used twice a day, and cold sponging when necessary; his bowels were opened by enemata, and in a few days he was convalescent. He was allowed chicken-broth from the first time I saw him, the fifth day of his illness. As a general rule, moderate support was allowed from a very early period. I did not find it necessary to give much wine; in many cases none had to be given.

I have mentioned that one of my first cases, that of a French sailor, terminated fatally. The only other fatal case I met with was the following:

Captain ———, master of a small English vessel, æt. 60; spare make, intemperate habits; was attacked with nausea, pains in the limbs and spine, and severe headach. His eyes were bright, with rather a threatening expression; intense heat of skin. I did not ascertain the temperature by the thermometer, but I never felt a skin which gave so intense a sensation of heat to the hand. Pulse 104, hard; manner excited. In this case the excited manner, bright eye, and hard pulse, seemed to threaten inflammatory action in the brain, or rather its coverings. He took an emetic, which fully unloaded the stomach. The cold affusion was used largely twice a day, and cold sponging at intervals; and his bowels were freely opened by full doses of calomel and senna mixture.

On the fifth day he appeared nearly convalescent; his ap-

petite had returned, and he saw some persons on business. On the sixth he said he felt quite well, only a little weak, and was anxious to be allowed some wine or porter. But though he said he felt quite well, his skin was still rather hot and dry, his manner excited, his pulse 86, and hard. I ordered him to keep perfectly quiet, and the body to be still sponged with lime-juice and water. At my evening visit I found that, shortly after my leaving in the morning, he had got up, dressed, and gone out with his mate. It appeared that he contrived, with assistance, to walk down to the quay and drink some spirits; he then went into some of the merchants' stores, and appeared in a very excited state. I found him nearly insensible; he could, however, be roused to slight consciousness. The left side of the body was rigid, with tonic spasm; the left arm extended, perfectly rigid, with convulsive spasms of the fingers; and the pulse, rapid and weak, could scarcely be counted. The usual treatment was gone through,—blisters, turpentine enemata, &c.; calomel was largely given, and mercurial frictions used, with the hope of bringing the system under the influence of mercury, but in vain. He lived for three days. The people in whose house he was would not allow an examination.

In this case there was evidently from the first a tendency to inflammatory disease in the brain or its meninges, and I regret that I did not at the onset of the disease bring him under the influence of mercury; I also regret that I did not effectually reduce all heat of the skin. The cold affusion was freely used twice a day, with cold sponging during the day, but still the object in view was not fulfilled; the heat of skin having never been completely reduced. The apparently favourable progress which he made led me to believe that the means used were sufficient to subdue the disease; and there is little doubt that, if he had been prevented going out on the day on which he died, his life would have been saved.

The following case is the only one in which deep yellow-

ness of the skin was observed, but I could at first get no history of it.

— Jones, an English sailor, on board an American vessel, was brought on shore to a lodging-house. It was not known how many days he had been ill.

Skin of a deep lemon colour, with dry heat of the body and coldness of the extremities. Tongue dry, hard, and as if shrivelled; no sordes on the teeth; pulse scarcely to be felt; subsultus tendinum; appears to be collected, but incapable of speaking, from weakness and the state of his tongue; occasional vomiting of dark, bilious matter, about a table-spoonful at a time. Ordered a draught, with three drops of hydrocyanic acid; warm wine and water; a pill with a grain of opium and two of quina every two hours; hot bricks to the feet, and the body to be sponged with cold lime-juice and water. Before the next morning he had taken six pills of the quina and opium. He had slept a little at intervals, and had passed about two wine-glassfuls of urine of a deep yellow colour.

He went on slowly improving from day to day; having taken about six of the pills in the twenty-four hours for four days; afterwards three in the twenty-four hours. His tongue gradually got moist, and the skin soft and perspiring. His bowels were occasionally opened by enemata. In eight days he was convalescent, without crisis or sudden change of any kind. He told me he had been five or six days ill at sea before he had been brought on shore, but he appeared to remember nothing of his case after the first or second day, when he described himself as suffering from the usual symptoms of fever.

Nothing certainly could be more unpromising than the appearance of this case at first: he appeared in an almost dying state. I cannot say that the effect of the quina and opium was very marked, as the improvement was so gradual; but still I think it is to it his recovery from an almost hopeless state is to be attributed.

I find it rather difficult to decide on the exact nature of the following case:

Mr. —, æt. 26, two years from England; had his seasoning fever the preceding year; ate some sardines for lunch on the 12th of July; complained that evening of their having disagreed with him; felt constant nausea; drank some glasses of warm water at bed hour, which partly unloaded his stomach. Attended to business, but did not feel quite well during the 13th and 14th inst. On the evening of the 15th, as he still had a good deal of nausea, he took an emetic of ipecacuanha; but did not rest well. On the morning of the 16th was feverish, with a copious eruption of urticaria; the wheals were of very large size, and almost covering the body and limbs; his face was not swelled; he had some cooling purgative medicine. Towards evening the urticaria receded after the operation of the medicine, and he expressed himself as quite relieved. Up to this time the symptoms of fever were trifling, such as might be expected in a severe attack of urticaria. On the morning of the 17th his whole body was again covered with the urticaria, but the fever was now intense; there was burning heat of skin, and at the same time perspiration of a peculiar and offensive odour; constant vomiting; intense headach; eyes injected, with a wild and threatening expression; pulse varying in character every moment, at one time tolerably full and steady, and again so weak and rapid as scarcely to be felt. During the course of the day he was occasionally slightly delirious; his tongue was loaded and red at the tip; and there was tenderness at the epigastrium. A dozen leeches were applied to the epigastrium; he took some draughts with hydrocyanic acid and soda; and in the evening a blister was applied to the pit of the stomach.

18th. In the morning greatly better, the eruption was gone, and the general feverish symptoms much less. Towards evening, however, the urticaria re-appeared, and the fever again returned. There was now also a recurrence of the vomiting, with hiccough very constant and distressing. The pain in the head also be-

came exceedingly acute, and there was again some delirium. The head was now shaved; leeches were applied, and a blister to the back of the neck; to be dressed with mercurial ointment, as also one on the epigastrium; an enema was given without effect: he could retain nothing but a little cold water on his stomach.

19th. He remained in the same state; having derived little or no relief from treatment. I now determined to use the cold affusion; and accordingly had him placed sitting in the bath, supported, when I poured some gallons of cold water over the head and body. This was repeated three times during the day. This night he got some sleep, the first for three nights. On the morning of the 20th the urticaria completely disappeared, and also the unpleasant odour of the perspiration. The cold affusion was continued twice a day for the next three days, when it was no longer required, the head and stomach symptoms gradually declining, along with the heat of skin. On the 24th all violent symptoms were gone, and salivation appeared from the mercurial dressings, which had been kept applied to the blisters. He went on in mild fever for four or five days longer, when, without any regular crisis, he was completely convalescent. However, on recovery from the attack, he was left in an exceedingly weak state. Two or three days after convalescence a new and unpleasant symptom, pain on taking food, presented itself, the mildest aliment, a little arrow-root for instance, was sufficient to bring it on: yet the tongue was nearly healthy, and not at all red. I had recourse to everything I could think of, as this pain was of great importance, preventing a person in his weak state from taking food. Among other remedies, dry cupping was used, and a blister to the epigastrium, the blistered surface was sprinkled with a grain of the acetate of morphia, mixed with two of starch; but nothing gave the least relief. He was in other respects now quite well, and his appetite good. I at length remembered that the swallowing of tobacco smoke was a popular remedy in cases of gas-

trodynia. I advised him to try a cigar, and swallow some of the smoke. It immediately effected what all medical means had completely failed to do, and the use of a few cigars completed his recovery.

This attack appears to have been a case of severe bilious remittent fever. It wanted many of the symptoms of poisoning by fish, to which, in some respects, it approached; and though some nausea was felt immediately, the severe symptoms did not come on for three days after eating the sardines; besides, other persons who partook of them did not suffer. If it be regarded as a case of severe bilious remittent, then he must have had the disease twice, the possibility of which most medical men who have practised on the coast deny.

In the latter end of October I was myself attacked with fever. The early symptoms of it were, on two previous occasions, warded off by an emetic. I felt unwell for a couple of days, with slight headach and some nausea, and tendency to shiver, but I was still able to go out. For two days more I lay in bed, but without taking any medicine, suffering merely from some headach and feverish heat. This I endeavoured to allay by getting into my bath three or four times each day, with the assistance of my servant. At length I was unable to move, and for some seven or eight days more remained nearly unconscious how time passed. My kind friends, Dr. Aitkin and Dr. Clarke, the colonial surgeons, attended me most assiduously, and to them I feel that I owe my life. I am not aware that I was delirious, and I could rouse myself to answer questions when I made the effort, but I felt utterly prostrate and indifferent. I was brought slightly under the influence of mercury. As is usual with persons after the fever, I remained miserably weak for some time, and suffered, as I before mentioned, from profuse perspiration; and even still, after nearly twelve months, I bear about with me some dregs of the fever, such as irregular ague, cold spine, and other African discomforts.

In concluding these observations, I feel how very imperfect they are, even as regards the cases I had under my own care. To make observations on the African fever valuable, each symptom should be carefully noted from day to day; the exact character of the countenance, and of the eye; the state of the pupil; the headach; the delirium (if present); the exact temperature of the skin before and after the use of the cold affusion; and also the presence or absence of tenderness of the epigastrium in relation to nausea or vomiting; the character of the matter vomited; the condition of the tongue, should all be recorded.

We might thus hope to be able to pronounce, with something like certainty, on the presence or absence of local inflammation. But it is very difficult for any person practising on the coast of Africa to draw up tables to such an extent, and with such accuracy, as would alone render them valuable.

There are materials in the army and navy medical records for sufficiently numerous tables, showing the proportionate number of cases in which local inflammations were found after death. But then we have still to consider, could such inflammations be diagnosed with certainty during life; how far ought they to direct or modify our treatment; at what stage of the disease they occurred; and how is their occurrence to be prevented.

The following facts appear to be pretty well established:

That a considerable number of fatal cases exhibit no traces of local inflammation.

That inflammatory patches of the mucous membrane of the stomach and duodenum are the most common inflammatory lesions.

That the brain is, in most instances, perfectly healthy.

That a congested state of the veins of the pia mater and of the sinuses, with some serous effusion, is the most common lesion found in the cranium.

That inflammation of the meninges sometimes occurs.

That there is, in almost every case of the disease, greatly increased heat of skin.

That the other symptoms generally mark an oppressed and low state of the vital powers.

That after recovery there generally remains a low and debilitated tone of the system, for a longer time than in most other diseases.

May we not conclude that the African fever requires to be treated on the same principles on which fever in Europe is treated, namely, a strict attention to symptoms, and particularly to local inflammations, as modified by the existing state of the system?

In conclusion, the following queries are naturally suggested:

Does mercury possess any power in controlling or arresting the course of morbid action, which is produced by the paludal poison, or is it really only of benefit in combating inflammatory action?

Is cold affusion likely to be sufficient, in the majority of cases, to remove the morbid heat of the skin?

Are there any remedial means by which we can allay nervous irritability, support the vital powers, and arrest the morbid remittent action?

Does the combination of quina and opium, in cases where it is not contra-indicated by local disease, seem likely to fulfil these indications?

I should be inclined to reply to the last three queries in the affirmative; but I can only venture to direct the attention of others to them, who have fuller opportunities for their investigation.

ART. VIII.—*Observations upon some Forms of Uterine Hemorrhage occurring in connexion with the Delivery of the Placenta.*

By ROBERT CANE, M. D., F. R. C. S. I., Physician to the Kilkenny Workhouse and Fever Hospital.

THE most trying and anxious moments of the physician's life, are those spent at the bed-side of cases of uterine hemorrhage. In the whole range of medical practice, few occurrences arise involving a more serious responsibility; requiring more of knowledge, firmness, and decision, or risking more the practitioner's character, and ultimate professional success. If there be added to these all-weighty considerations, the interest and sympathy which every accoucheur of a feeling mind must have for patients so situated, the incitements must be increased to study with the utmost care the nature of hemorrhage, and of the curative means for it, which art places within our reach.

Having for some years enjoyed considerable opportunities of obtaining obstetric knowledge, and having reflected a good deal both upon what I have seen in my own practice and what I have read and witnessed of the practice of others, I have been led to consider the nature of the causes giving rise to such hemorrhage, and the various occurrences which appear to promote, encourage, or prolong it, as well as the means of arresting its progress when it does occur, or of guarding against and preventing its occurrence in cases predisposed to it.

In the present paper I propose to offer a few considerations upon that hemorrhage which arises after the delivery of the fœtus, and which, with one exception(*a*), is strictly in connexion with the state of the placenta and its delivery, or else peculiar to the state of the patient's constitution, as influencing the condition of the womb. This hemorrhage may occur before, during, or after the delivery of the placenta. It may

(*a*) The bleeding from a torn perinæum, which I have included merely because it is sometimes dealt with in practice as uterine.

be internal or external. It may be gradually and stealthily serious, or considerable in quantity and productive of immediate and imminent danger. Indeed so suddenly and unlooked-for does it sometimes occur, that the accoucheur may be pronouncing his "all safe and well," and be leaving or have left the room, when he is summoned back to see his patient blanched and gasping.

Hemorrhage occurring after the birth of the fœtus usually depends on some one of the following causes:

- 1st. A too rapid delivery of the fœtus.
- 2nd. A too slow delivery of the fœtus.
- 3rd. A premature rupturing of the membranes.
- 4th. A partial and imperfect separation of the placenta.
- 5th. A portion of placenta being left behind after the rest is removed.
- 6th. A retention of an unattached placenta in a malposition.
- 7th. Upon atony of the uterus independent of any of these causes.
- 8th. Upon idiosyncrasy or hemorrhagic tendency in the individual.
- 9th. Upon an over distended state of the urinary bladder.
- 10th. Upon a laceration of the perinæum.

I shall consider each of these forms separately, and, as I proceed, will dwell on some points, not usually, I believe, noticed in books on the practice of midwifery, and especially upon those matters which might tend to prolong the hemorrhage, at a time when ordinary treatment should hold it under control. Amongst these, in addition to the nature of the ingesta allowed and the temperature of the room, I would especially direct attention to the mode of making pressure over the uterus, and to the state of the urinary bladder; each of which has, I feel satisfied, much to do in prolonging and causing a recurrence of hemorrhage. I shall consider these subjects *seriatim*, and, where it may appear useful, will refer to cases

illustrating each form, and to those signs for which the accoucheur must be watchful, as being frequently the first indications of approaching hemorrhage, and oftentimes of a hemorrhage internal and hidden from view, until developed too late for cure. They are signs independent of the indications supplied by the napkins, which should be always closely watched for some hours after delivery. The signs I allude to are,

1st. The peculiar state of the pulse.

2nd. The state of the uterus as felt through the abdominal muscles.

3rd. The sensations of the patient herself.

In resuming the several sources of placental hemorrhage, I will briefly dispose of those, upon the nature of which writers are all agreed, and will dwell more particularly upon those matters where I have presumed to offer any view, or to notice any symptom not generally recognised.

First cause.—*A too rapid delivery*. When the foetus is rapidly delivered, and with little or scarcely any previous uterine pain, there is usually a considerable escape of blood just before or with the placenta, and immediately after it; and, in many cases, it will be of such a nature, as to constitute active and serious hemorrhage. Occasionally it will not occur until the after-birth has come away, and not unfrequently it will be then chiefly of the variety designated “internal hemorrhage.”

It would appear as if the uterus had not been exercised by previous attempts at contraction for a sufficient duration of time to give it that tone and power which will enable it to contract so perfectly as to completely close the mouths of its blood-vessels, or, having contracted, that it should permanently hold to, and continue that contraction, so as to prevent the hemorrhage, of all others the most insidiously dangerous, which arises from a little blood being first poured out, which coagulates, because it trickles slowly and is small in quantity, and whose coagulation plugs up and temporarily seals the mouth

or neck of the uterus, and so prevents, for a time, blood flowing outwards. The little goes on increasing, and the more it increases, the more the tendency to hemorrhage is increased likewise, because the gradual expansion of the uterus brings it to a state in which the mouths of the blood-vessels are more and more opened. This hemorrhage is often undetected until the woman faints, and then the previously unobservant accoucheur may, on introducing his hand, or by pressing over the uterus, remove pounds' weight of coagula, and perhaps at the moment the uterus makes an effort at contraction; under either proceeding, another gush and another swoon may release him from his charge, and leave to his suggestive conscience the thought—how a little watchfulness might have saved so terrible a catastrophe. Fortunately it does not always occur internally, but it does so frequently. On other occasions it will occur as what the nurses term “very free discharges.” A napkin will be wetted every three or four minutes until fainting takes place. This discharge may occur at the end of one, two, or several hours. Sometimes it occurs and ceases, and re-occurs again. In many of those cases the hemorrhage takes place with a distinct contraction of the uterus, palpable to the hand, but devoid of pain, evidently imitating a natural and protective action, but inefficient in degree. There is this difference between it and the perfect normal contraction, that though the attendant can feel the contraction,—as evidenced by the uterus growing hard and lessening in size, and getting from under his hand down into the pelvis, while its contents, either clotted or fluid blood, are expelled,—yet the hardness speedily lessens, and he feels in its place a soft and pulpy mass, swelling up and increasing under his hand, while, at the same time, the discharge ceases until the contraction again takes place, which it may do at various intervals of five, ten, or fifteen minutes. This hemorrhage is peculiarly liable to be mismanaged by a negligent or inexperienced attendant, who may consider the period of the apparent cessation as one promising arrest of the

hemorrhage, and therefore waits with his remedies until the discharge again appears; whereas the time for treatment is in the interval, and before the discharge comes on; which discharge is to be viewed as the result of an ineffectual effort of nature to close the womb. This kind of discharge, if it be not arrested by appropriate treatment, or does not wear the patient out, will occasionally cease of itself; nature succeeding in its struggle with morbid tendency, but frequently not until the sources of after evils are left behind. It is a state of hemorrhage which sometimes becomes habitual in after confinements, recurring after each delivery, and from which, if no one attack proves fatal, the woman recovers with a broken-down constitution, shortly to die of dropsy or some chest affection. This hemorrhage from an over-quick delivery is sometimes so rapid and considerable as to be immediately fatal.

The second form—*a too slow delivery*—presents nearly the same features as to the mode of bleeding, and differs only in the nature of the cause, which appears to depend more upon actual debility of the uterus, its wanting due nervous energy or muscular strength, or from being worn out and exhausted, or from general ill-health. And therefore it happens that this variety of hemorrhage will be more unmanageable and more serious than the first; and, as might have been anticipated, it will supply a larger amount of fatal cases. It is a variety often to be met with amongst women who have married too young, and who have had a numerous family. Such cases are of ordinary occurrence in such women, from 30 to 45, or to the period of ceasing to bear children.

The third variety—from *premature rupturing of the membranes*—I am not aware of having been noticed as a source of hemorrhage. Indeed I know there are accoucheurs who boast that they continually lessen the duration of a woman's pain and the period of their own attendance, by rupturing the membranes as soon as *the os uteri is fully opened*.

At that period its rupture and the escape of the waters will certainly hurry expulsive pains. But I have long felt satisfied that this operation, so simple in itself, considered so harmless, is oftentimes, though not always, a source of hemorrhage. If we stop to examine mechanically the results of rupture of the membranes upon the placenta, we can readily understand how this occurs. While the membranes remain unbroken, the action of the uterus, propelling the whole mass of its contents together, produces as though it were a double power, the uterus pressing upon the placenta above, and at the same time forcing the whole bag downwards, whereby all that force which acts upon the bottom of the bag, in proportion as it urges it forwards, causes a secondary action, by dragging upon the edges of the placenta to which it is attached. So that while the uterus is expelling the central mass, the edges of that central mass are dragged downwards by the membranes being forced forward as an unbroken whole. It is obvious that the moment the membranes are broken this secondary power is lost; there is no longer any power acting downwards, as being attached directly to the edges of the placenta, which is then only acted upon by the pressure of the uterus upon its maternal side. While the membranes were unbroken, the action was so steady and simply perfect, that its utility must be at once recognised as a means of detaching the placenta by a gradual and beautifully uniform loosening of its connexions, and preparing it for that perfect separation which in most cases appears to occur just as the child is being delivered. Now it has been forcing itself upon my attention for some years back that I met hemorrhage, or a tendency to hemorrhage, much more frequently in cases where the membranes were early ruptured, either designedly or accidentally; and further, that I had somewhat oftener to remove an adherent placenta in such cases. Such did not occur as an invariable rule, but their occurrence was so much more frequent in such cases, relatively to general practice, that I began to reflect upon the matter, and now con-

sider it to be quite in accordance with the nature of the cases that such results should have ensued. It may be argued,—“Why is not there always hemorrhage where the membranes are ruptured early, as they frequently are?” Now I do not think that the membranes are ruptured in one case out of twenty, by the natural efforts, until after the head has entered the pelvis, and is presenting at the vulva or pressing on the perinæum. Consequently, in the great majority of natural deliveries the membranes are carried down with the presentation; and I have no doubt that hemorrhage will arise, and the placenta be adherent, and have to be detached by manual efforts, in a vastly larger proportion of premature rupture cases than in the cases where the membranes were not broken, or did not give way, until the vertex was at the os externum. During several years that my mind has been directed to this fact, I cannot call to recollection a single case occurring in my own practice, where, if the membranes came unbroken to the os externum, I had to remove an attached placenta. Nature never does anything in vain; and if the membranes were not valuable in this and other ways, we would not have them continuing so constantly unbroken until the moment of expulsion. My own mind is so satisfied upon the subject, that I never rupture the membranes unless there be some strong reason for doing so.

The fourth variety—a *partially detached placenta*. This may arise as a consequence of the foregoing, as a result of imperfect uterine action, or as being caused by injudicious efforts to separate the placenta by dragging upon the cord. It is generally of a serious kind, and requires to be promptly dealt with.

The fifth variety—a *portion of placenta being retained*. This is generally the result of improper force in removing the placenta. It may occur in a rare case, even in the hands of an able physician, who, in peeling off an adherent placenta, if it be soft and unhealthy, may break a portion of it, leaving a bit of its maternal side adherent to the walls of the uterus. Every

physician who removes an adherent placenta should lay it out on a table, and look carefully over its maternal side, to see that there is no gap indicating a piece wanting, and which has been left in the uterus; if there be it will certainly do mischief in some shape or other.

The sixth variety—*a retained, detached, but mal-placed, placenta*. This variety, arising from an irregular position of the placenta, which, though perfectly detached, may lie awkwardly as regards the uterus, and so prevent its proper contraction, is well understood by practitioners who have watched the varieties of hemorrhage, where abstraction of the placenta at once arrests the discharge. When the uterus contracts upon the placenta, while it is yet retained in its proper position within that organ, it is evidently not only pressed upon, but it is even so compressed as to feel denser to the hand than it will feel after it is removed. This pressure, which is from above downwards, and from the circumference to the centre, is exercised, when the action is perfectly normal, uniformly from all parts of the uterus upon all points of the placenta, save at the os; and while it so continues there is no hemorrhage, because the compressing and the compressed parts are so adapted to each other that there is no room for blood to escape. And while hemorrhage is thus prevented for the time, the uterus is resting as if to gain renewed strength for its final contractile efforts after the placenta is expelled, and when greater energy still will be needed to extend its contraction still further, until its internal surfaces meet, and even its own substance becomes so compressed and condensed, and its vessels so reduced in size, and so acted upon by that crossing and interlacing of its fibres, which is so remarkable in the muscular structure of the uterus, that no blood of any consequence can longer escape. Such is the perfectly normal state, but the deviations are many, and one of them is the misplacement of the placenta; so that doubled upon itself, or coiled with a channel along its centre, or turned so that its amniotic surface is to the uterus, and its

maternal surface looking downwards or to one side, it interferes with the perfect adaptation we have alluded to, and therefore blood escapes. Such malposition is common, and when it occurs the placenta must be removed.

Seventh variety—*atony of the uterus*. This class will include that atony which results from peculiarity of constitution, or from extreme prostration of vital power, or from the influence of disease. There are diseases which appear peculiarly to modify and lessen the quantity of blood lost during delivery. Thus, delivery occurring in Asiatic cholera was so bloodless as to be called by nurses “white confinements.” Delivery occurring while the mother is the subject of constitutional syphilis is rarely accompanied by hemorrhage; but in typhus and common fever the tendency to loss of blood is great. But there are other diseases occurring in the neighbourhood of the uterus which appear to diminish its power, to produce atony of the organ, and thus to predispose to hemorrhage. Of three such cases which I can recollect, and where there was bleeding from imperfect contraction and feeble energy of the organ, one had enlarged liver, one had enlarged ovary, and one had Bright’s disease of the kidney.

Eighth variety—*hemorrhagic tendency*. Such cases are occasionally met with, often in strumous subjects. The most unmanageable case I ever witnessed was a lady in whom the tendency to hemorrhage was so universal, that causes producing ordinary functional attacks in others were sure to cause bleeding from the nose, the lungs, or the bowels in her; and yet she was not sanguine or plethoric, and there was no disease appreciable: I am inclined to think it must have depended upon some peculiar state of the capillary system of vessels. Her confinements were awfully hemorrhagic.

Ninth variety—*an over distended urinary bladder*. It will sometimes happen that a physician called in after delivery to witness a case of flooding, may not have his attention directed to the state of the bladder; and a woman, from delicacy or

from inattention, may not allude to it: women, too, be it remembered, think nothing of retaining twelve hours' urine. Now it is easy to comprehend that a distended bladder, full of hot urine, must do mischief in such a case. Who would dream of applying a stomach warmer over the uterus of a woman just recently confined, and whose uterus was discharging blood freely. Yet, obvious as the matter now seems to me, it was only incidentally that my attention was fixed upon it about six years ago, by a lady who was suffering under hemorrhage. Smart bleeding had set in about an hour after delivery; at the end of two hours it was still uncontrolled, but upon her getting up and passing more than a pint of urine,—and in these cases the urine appears to be of a higher temperature than usual,—the bleeding immediately ceased, and did not return. Since then some similar cases have confirmed me in the impression that a bladder so distended with hot urine will cause uterine bleeding, or be a cause of prolonging it when it is present, and should in all such cases be looked after.

Tenth variety—*lacerated perinæum*. The bleeding which arises sometimes in the case of a torn perinæum is not unfrequently confounded with that which comes from the uterus. It is seen only on the napkins; and though the uterus be not large, yet I have seen cold applied over it, and ergot given, to control a bleeding which came from the perinæum, but which, after continuing for a couple of hours, had been quite sufficient to influence the pulse and to cause fainting. The attendant should, therefore, make sure in every such case that there be not a torn perinæum.

Having now enumerated those causes which appear to me to be concerned in the production of hemorrhage showing itself after the delivery of the child, I will venture a few remarks upon matters connected with the care of the patient. And first, are we right in even recognising the rule laid down by some obstetric writers, that if there be no over discharge, and matters are otherwise looking well, we may leave the room of

our patient within one hour after the delivery of the placenta? In two of the worst cases of uterine hemorrhage I ever saw, matters went on well for two hours, and in a third case hemorrhage did not appear until after the lapse of four hours. I conceive it should be a rule with the physician not to leave the house if there be even free discharge, or a soft state of the uterus as evidenced by the hand placed on the hypogastrium, unless he lives near, and has a nurse in charge upon whose watchfulness and intelligence he can rely; and it is hard to find such. He should be still more watchful if the pulse be in any degree irregular. I cannot call to mind that for several years this sign, upon which I place the utmost reliance, has deceived me. As long as the pulse varies thus,—twenty beats for one quarter minute, perhaps twenty-five beats the next,—above all, if it intermits, there is danger of hemorrhage, or hemorrhage is at hand. It is not a hemorrhagic pulse; it is not a plethoric pulse; nor yet a pulse of debility: but it is a pulse tolerably natural as to the character of its beat, but irregular as to the number of beats in a given time, irregular in rhythm, if I may so express it. There are, as I have before alluded to, three indications which often tell the accoucheur hemorrhage is beginning or begun, before blood is poured out externally, so as to arrest the attention of patient, nurse, or doctor. If blood comes freely the patient may herself call attention to it, and tell you there is “a flow,” or the nurse will display a napkin. But we are now especially referring to cases where these evidences may not be before the physician. These indications are, first, the irregularity of the pulse; second, the relaxing of the uterus; third, the morbid vision and hearing of the patient. And first, of the pulse: the patient has been an hour or so delivered; the accoucheur is watching her; he has just pressed the uterus and feels it is moderately firm and of moderate size; he has felt her pulse repeatedly, and it has been 100 for the whole hour; he feels it again, it beats slowly, it is but 30 or 35 for the half minute; he

is surprised how much it is coming down; it has fallen from 100 to 70 in the minute, but the next half minute it beats 50 again. If he now puts his hand in under the binder he will find the uterus has risen somewhat in the pelvis, and feels something larger and something softer than it did a moment back. Here are two of the indications,—the condition of the pulse, and the condition of the womb. There may be now an escape of some blood upon the napkin, perhaps a gush, but frequently there is not; occasionally not a drop has as yet appeared externally, and the patient chats on and looks cheerful and well. Now is the moment of treatment,—if matters go much further the third and next indication may present itself; the patient tells him her eyes are dim, or there is smoke or a fog in the room, or she asks him with a stare did he hear that noise, or that wind, or that music, and swoons in a moment after. And now, if the uterus be felt for, it will be found high in the abdomen; in bad cases as high as the epigastrium, soft, flaccid, full of blood; and all this has been the work of a few minutes.

Be it remembered, therefore, that the pulse, the uterus, and the patient's sensations will often announce the approach and presence of hemorrhage at a time when the patient's replies, and the state of the napkins would have declared all was doing well. They are, therefore, to be assiduously watched. And, while speaking of these indications of approaching hemorrhage, I will allude to those circumstances which, if there be hemorrhagic tendency, are calculated to keep it up, or to increase it. One is an improper mode of making pressure over the uterus after the placenta is delivered. The physician sometimes places his hand directly above the pubis, laying it flat upon the anterior wall of the uterus, and so pressing it back against the spine. This pressure impedes the natural flow of blood in the part, and retards its free egress from the veins out of the womb; it does mischief too by lessening the size of the vena cava, which is pressed between it and the spine, where the iliac

veins empty into it, and so blood is kept in the uterus, and engorgement of its vessels thus produced. There is much in the mode of using pressure. I think it is Dr. Collins who, in his able work, points out that the uterus should be followed down into the pelvis with the hand; but the matter is so all-important that we cannot be too minute in our directions for regulating it. This pressure, which must not be in such a direction or such a way as to obstruct the venous circulation of the uterus, should be uniform and steady. It should not be forcible, or so as to produce pain, but should be a gentle, yet firm, grasping of the womb through the abdominal coverings; the hand being introduced above the womb, the palm looking downwards, the back of the hand towards the stomach, and the edge towards the spine; thus will the palm be able to adapt itself over the fundus of the uterus, and to guide it down into the pelvis, or resist its expansion upwards, or to aid it in expelling either its contained placenta or clotted blood. And if the hand is so placed and exercised with a gentle grasping and rubbing motion,—rubbing, as it were, the uterus upon its contents,—such a manœuvre will not only empty a loaded womb, but will induce healthy contractions, and very frequently, in my hands, has even detached an adherent placenta. In connexion with improper pressure as a source of increasing bleeding, or at least of keeping it up, I would here again allude to the bladder being allowed to accumulate urine, which will act like a warm fomentation to the bleeding womb.

In the directions for managing a lying-in patient labouring under hemorrhage, I will be minute, even though that minuteness may expose me to the hazard of recapitulating matters, much of which may be said to be known to every tyro. Be it so; yet am I satisfied and impressed with a thorough conviction that in ordinary practice they are not observed to the extent they should be, and that the consequences are most lamentable upon many occasions.

The physician should not only have a suitable pocket-case, containing laudanum, ergot, catheters, scissors, &c. &c., but he should be supplied with an elastic globular syringe, capable of holding from six to eight ounces of water, and having an ivory pipe four or five inches long, with eight or ten apertures at the top, some of them at the side. There should be an ivory shield between the pipe and bottle, which may be of Indian rubber, or gutta percha. I would no more think of going to attend a lying-in case without such a syringe, than I would of going to a case of apoplexy without my lancets. When it is necessary to use cold water as an injection into the uterus, the advantage of this kind of syringe is, that it can be filled and emptied with one hand, so that the other hand is free to press upon the uterus at the same time. For example, the accoucheur is in attendance upon a case of uterine hemorrhage arising after both foetus and placenta are delivered. His left hand is occupied inducing suitable contractions in the uterus, while with his right he fills the syringe from a basin of cold water, passes the pipe of it into the vagina, directing its point for the uterus, and pressing the shield steadily against the perinæum, he closes his hand upon it, and so empties the full contents of it directly into the uterus. A large sponge should lie ready at the vulva to catch the water as it comes back, and thus prevent unnecessary wetting of the bed and patient. By this means the cold water is brought forcibly in contact with the bleeding vessels themselves, and the salutary effect is often as immediate as it is valuable. I am so satisfied of the superiority of this mode of applying cold over all others, that I now never use either cold wet napkins, or the douche, which were such common remedies when I was a student, and which, I regret to add, are still used much more than they ought to be. I have been using cold in this way for years, and I have never witnessed from it any of those consequences so much dreaded. I have no fear of the water passing into

the fallopian tubes, or thence to the cavity of the peritonæum; and I never saw inflammation, either of the womb or its appendages, or even common cold, supervene on its application. The left hand, which is above the uterus, should be occasionally plunged in cold water, so as to keep its temperature low, else, when it gets heated, it will cause mischief. So soon as the bleeding is controlled, and the physician feels satisfied with the condition of the uterus,—and he should not feel satisfied while it shows any tendency to enlarge and get soft under his hand, or while any one spot of it, though the rest be firmly contracted, feels soft and yielding under the fingers,—he may put on a binder. This should be done without allowing any exertion upon the part of the patient. The binder should come down as low as the trochanters, otherwise it will after a time slip upwards. Under this binder, and immediately above the uterus, should be placed a pad, made either of a couple of tightly folded napkins, or a good toilet-table pin-cushion; it should be the size of a thick duodecimo volume, and should be introduced *edgeways*, so as to be a shelf above the uterus, and between it and the stomach, and kept there by the bandage being tightly drawn over it. The pad may be removed after eight or ten hours. A great deal depends upon the proper placing of it and the binder. I do not think the doing of it should be left to a nurse, as it too often is. As to a plug or tampon in the vagina, as a means of controlling bleeding after the delivery of a full-grown foetus,—though some respectable accoucheurs have recommended it,—I believe no intelligent practitioner uses it now. I never use it except in hemorrhages occurring in the earlier months of pregnancy, when the uterus is yet small, and could not expand sufficiently, from internal hemorrhage, to cause death. I once saw this plug in consultation-practice, where the patient died with a uterus full of blood.

Now this treatment has reference merely to the bleeding,

but the accoucheur will have to consider whether there be a bit of retained or adherent placenta. This he may know by examining the placenta itself; and if there be, and that the bleeding does not yield, the hand will have to be introduced, and the bit sought for and removed,—an operation much more difficult than removing a whole placenta or a child,—one requiring all the knowledge, coolness, firmness, and gentleness of hand of which a physician is capable,—one of difficulty to him and hazard to his patient,—wherefore it must not be had recourse to without full reason. And should he not be able to see the placenta, he must then judge for himself by making all inquiry as to whether it came away of itself, or by pulling on the cord, or required the hand to be introduced for its removal. No rule can be laid down for such a case, but experience and observation will generally guide to what is right. Should the hemorrhage occur while the placenta is retained, it will have to be removed, and here judgment must also decide whether it be merely a retained loose placenta, or a morbidly-adherent placenta; because, in the first case, it will never be necessary to introduce the hand, and very frequently not necessary even in the second variety, but it may occasionally require to be removed by detachment with the fingers. Now I am satisfied that the feeling communicated by drawing on the cord in the following manner will always decide the nature of the retention. If the uterus be kept steady with the left hand, and the attendant draws the cord tightly with the right hand, and then lets it go, feeling it still as it escapes, the sensation conveyed to his hand will be that of resistance only, if it be merely a loose placenta, retained by spasmodic or normal contraction of the uterus; but if it be an adherent placenta, the cord, when so tightened, and then let go, will escape from him with a decided spring, or resiliency, such as that felt upon raising a stone by the vacuum cord and leather process displayed in a schoolboy's "soaker." Once felt and noted,

the feeling becomes as familiar to the hand as the crepitus of a fractured bone, or the cat-purr in narrowing of a blood-vessel. Here the well-directed pressure from above, and steady but gentle traction by the cord will always dislodge the retained placenta, and will frequently succeed, too, with the adherent one; the exceptions generally being where the woman has not gone her full time, or where the contracting action of the uterus has ceased for some time before the case was seen. And, be it remembered, that a placenta so expelled by pressure from above will come away entire, no portion being left behind. In very thin subjects pressure made with the thumb upon the aorta, where it lies upon the last lumbar vertebra, will occasionally aid in arresting hemorrhage, but such pressure cannot be kept up, and is only of temporary advantage. Having now dwelt sufficiently upon the mechanical means useful in stopping hemorrhage, it is right to consider other remedies.

Ergot has been much spoken of, and extensively used, but my own experience of it is, that it is of most use in cases of atony of the womb, or where its power is sluggish; but it does not appear to me that it does good if the labour has ceased for a couple of hours. I am bound to say that, given in the manner recommended by Dr. Beatty, I have faith in its power as a preventive of hemorrhage, in cases where a predisposition to such exists. Acting upon the advice contained in his paper, I have given it in three cases of marked hemorrhagic tendency, just as delivery was taking place, and in each with decided success. Applying the child to the breast immediately after delivery has been ably advocated by a writer in the *Dublin Journal*. I think the child should be placed at the breast as soon after delivery as other matters will admit of, and I have always so directed; but I am not quite clear that this does more than, by creating a tendency to the breast, act as a sort of derivative to lessen the tendency to the uterus. But this is useful, and, therefore the advice ought to be fol-

lowed. The employment of stimulants and restoratives is not necessary to be discussed here : every physician will use them in flooding cases as he sees necessary, and that they may be administered even when patients cannot swallow, or cannot retain them on the stomach, is well known to all, and is exemplified in Cases VI. and VII. Anodynes are frequently given immediately after delivery to women who say they are subject to after-pains. I gave them myself some years ago, but latterly I began to think they did mischief in some cases, increasing the tendency to bleed by relaxing the uterus. I now, in ordinary cases, never give an anodyne within the first twelve hours.

Though objecting to the plug as a means of arresting hemorrhage after delivery at the full time, it will be seen from Cases VI. VII. XVIII. and XIX. that I have found it useful in cases of bleeding in the early months of pregnancy, and also in a remarkable case of hydatids. Case XVIII. shows how cautious we should be in concluding that the risk of hemorrhage is over if a complete ovum comes away, even in the early weeks of gestation. The double pregnancy in that instance is worth recording. Case XII. illustrates bleeding from a rent in the perinæum. An accoucheur of great experience has given it as his opinion that a lacerated perinæum never occurs in unassisted labour ; I have certainly seen it in labour where the woman was delivered alone. Yet I feel satisfied that improper pressure in guarding, as it is termed, the perinæum, is the cause of many rents. The perinæum never should be pressed by the hand, which should be applied only to guide the presentation forward. Sutures, for a torn perinæum, have been advised, but I do not think union by the first intention can be obtained while the lochiæ are flowing. I have seen the attempt fail in more than one case.

I will now conclude by a short reference to the after treatment of hemorrhage. In the after consequences of severe loss

of blood, the train of symptoms is oftentimes exceedingly distressing. The irritability of stomach, the agonizing headaches, the thirst, and total loss of appetite, together with the absence of all mental and bodily energy, constitute an assemblage of symptoms calling for careful investigation and able treatment. The headach is palpably dependent upon the state of the heart and circulation,—the quantity as well as the quality of the blood going to the head.

The *bruit* and *fremissement* which the physician hears and feels over the cardiac region, the patient will sometimes tell you she is conscious of, and that the “booming” which she feels going up her neck is the cause of her pain, while her sallow, tallowy aspect, too clear eyes, and bloodless lips, indicate the source of her sufferings. Now local applications are of little value in this headach. Leeches are mischievous, yet I have seen them applied; blisters are valueless; cold applications give momentary relief. To renovate the circulating mass, and to control the heart’s action, are the indications to be attended to. A strong belladonna plaster should be placed over the heart. The tincture of digitalis should be given in Bewley and Evans’s effervescing iron mixture; this valuable chalybeate quiets the stomach, and gives appetite, while the digitalis lessens the violence of the heart’s action and increases that of the kidneys,—an important point in a malady so liable to end in dropsical effusion. Ten drops of the digitalis should be given in one or two ounces of the iron mixture three times a day; and a mild hypnotic at night when restlessness and loss of sleep call for it. Opium and its preparations seldom agree; if they produce sleep, the heart’s action and headach are generally worse the next day. The sedatives which answer best are henbane, hops, lactucarium, and camphor, with syrup of poppies. Should the bowels be obstinate (and they generally are), they should be emptied by mere soap and water or gruel lavements. The bed-chamber should be thoroughly ventilated, and the patient should be kept a good deal in the recumbent position, as that in which the heart will act less tumult-

tuously, the circulation will be easiest performed, and the head freest from pain ; there will be also in that position less irritation of stomach, and less tendency to faintness. Every kind of bland nourishment should be given, a little at a time, but often, light soups, jellies, claret, and once a day an egg beat up with a couple of drachms of sherry wine or brandy. Easy carriage exercise, as soon as she is able to bear it, and change of air,—if in the season, to the sea,—will gradually restore the powers of life. But such cases are tedious and require close watching, for the slightest indiscretion in diet will throw them back, and it is often many days before the stomach will bear any solid nutriment whatever. A little toast soaked in weak tea or in port wine negus, chicken panada, calf's sweetbread, and similar articles of diet, must constitute the first attempts at what often brings on vomiting and diarrhœa if given too soon.

Finally, once uterine hemorrhage has shown itself in a confinement, there is great liability to its recurrence in subsequent labours, and the accoucheur will, therefore, be on his guard, and prepared to combat a morbid action, which, although a vast number of patients recover from it, yet leaves behind those diseases which afterwards abridge many a valuable life, although death, when it comes, is charged upon other causes, the true cause having been “flooding, and the shocks of repeated uterine hemorrhage.”

The following cases are given in illustration of the views now put forward. The reader will see their bearing upon this paper, and they have been given in as brief a manner as possible, so as to fasten attention merely upon the point where each case has reference to some opinion advanced, or is illustrative of one of the varieties of hemorrhage.

CASE I.—Mrs. P——, a large, well-made woman, was delivered by a single pain, and without assistance ; child and placenta came away together. The uterus did not contract well, and violent hemorrhage had set in by the time I arrived. Cold injections, friction, and steady pressure over the uterus,

finally induced contraction, and stopped the hemorrhage, but an hour elapsed before the womb resumed its normal size and feel.

CASE II.—Mrs. W——, a weak and delicate woman, suffering severely from grief for the loss of a child that was drowned; had a feeble and tedious labour; presentation natural; was twelve hours ill; placenta came away naturally; ordinary discharges for four hours; but, as her pulse continued to vary, I did not leave her, but kept watching the womb and resisting its tendency to enlarge. At the end of that time violent hemorrhage set in, though she had got several doses of ergot; it was finally controlled by pressure, and cold water thrown up *per vaginam* into the womb.

CASE III.—Mrs. S——, her fifth child, was in labour several hours, with feeble and defective pains, before the head appeared entering the pelvis; when it did, the membranes immediately gave way, it being a face presentation. In one hour after delivery there was still free bleeding, and the placenta had not come away. It was found to be adherent; and had to be detached with the hand.

CASE IV.—Mrs. L——; her fourth child; good delivery, but membranes had ruptured early; placenta had not come away at the end of an hour; there was free bleeding; and an adherent placenta had to be detached.

CASE V.—Mrs. P——. A case in which there was good labour; child expelled in the ordinary time, but the placenta not coming away within an hour, and there being a free discharge, I passed my hand into the vagina, and found the placenta in the os uteri, where it had fallen down, and was doubled upon itself, so that the finger readily passed in through a sulcus or slit formed by its amniotic sides being opposed to each other, without being in actual contact, and along this sulcus, as in a channel, blood was flowing. Felt through the abdomen, the womb appeared oblong and softish. Upon the removal of the placenta the bleeding ceased.

CASE VI.—Mrs. C———; premature confinement at the fourth month; was called to attend her, but being from home, the case passed into the hands of a *femme sage* of some reputation in the neighbourhood. Upon my return I called to inquire for her, and the nurse told me she had been delivered about an hour before of a small foetus, and assured me the placenta had come away. I was recalled in the course of the night and found her pulseless from loss of blood; the nurse again assured me the placenta had come away with the foetus, and was indignant at being asked the question a second time. Resolving to judge for myself, I this time examined and found a placenta projecting from the uterus and keeping it open. I removed it, and the bleeding, then but a dribbling, ceased; yet the patient's strength was so far gone, that she was unable to swallow; even half filled tea-spoons of brandy and water, threatened suffocation. I used a bit of sponge, which, squeezed between my fingers, was made to convey the necessary stimulant, nearly guttatim along the tongue and fauces; and, after a night spent in efforts to restore warmth and reaction, and by the time she had taken over eight ounces of brandy, she rallied, giving me a useful lesson of how far I was to trust a nurse's knowledge.

CASE VII.—Mrs. F———; was called to her at night; she had been delivered prematurely, about ten hours before, of twins, being pregnant somewhat about the fourth month, and the physician who attended her had been called away from her to a distance into the country. Found her cold, blanched, and pulseless, from uterine hemorrhage; was told there had been a gradual and constant draining since morning; there was considerable jactitation, and everything given to her was rejected from the stomach. Upon examination, I found a loose placenta hanging down from the uterus into the vagina, which, with some difficulty, I was able to remove, after which I injected cold water along the passages, and then used a sponge tampon. The bleeding was immediately controlled, but the

collapse still continuing, and all remedies failing to quiet the stomach, I directed one ounce of brandy, and three of strong jelly soup, to be thrown up the rectum with a tube every hour. She got ten such injections through the night, which, aided by warm applications, restored her.

CASE VIII.—Mrs. ———, the lady of a medical man residing in the country. I was required to see her in consultation with her husband and two other physicians. Was told she had been confined three weeks before; that she had a good deal of hemorrhage after the delivery of the child, and that the placenta had to be removed by her husband, who assured me it all came away; that the bleeding was pretty constant, ever since, but not much at a time, and that latterly the discharge of blood was mixed with matter so offensive, that ulceration of the womb or cancer was dreaded. The lady had quite the green paleness attendant upon uterine mischief; her lips bloodless; pulse a flutter; action of heart inordinate; dry, hot skin; glossy eyes; violent headach, and fainted upon the slightest effort to move or be raised even a few inches from her pillow; her stomach irritable, and rejecting everything. From a peculiar smell at her bed-side, I again asked about the placenta, but was given the same assurance, that it came away entire, and I was asked to examine and satisfy myself. I did so with the fingers of the right hand, aided by the left from above the uterus, and removed from the patulous mouth of the flaccid womb a piece of placenta, the size of half an orange, in a state of considerable decomposition, and with a portion of membrane attached to it. The womb was injected with cold water, a mild hypnotic draught was administered, claret and chicken jelly ordered, with Bewley and Evans's effervescing chalybeate thrice daily, to settle the stomach and serve as a tonic. And I must here do justice to that remedy by remarking, that in irritable stomach after hemorrhage, and various female diseases connected with uterine mischief, it is one of the most valuable medicines I know of. The lady made a good and rapid recovery.

CASE IX.—Mrs. W——, an exceedingly delicate woman, the subject of numerous illnesses, and the mother of a large family. All her labours had been difficult and tedious. I had attended her in several confinements, but upon the present occasion there was evident failure of her constitutional powers, and the uterine action was feeble in the extreme, and long intervals between the pains, making a marked contrast with all her former confinements, which, though tedious, had always presented good uterine action. She was at last delivered, after twelve hours from the first pains. The placenta came away easily, but there was a continued flow, in spite of every effort to repress it. She got ergot, cold injections, and finally the hand had to be introduced before the torpid and flaccid uterus could be got to assume anything like healthy contraction. She required constant watching for many hours, and made a slow recovery.

CASE X.(a)—Mrs. D——; had a good delivery. It was her second child, and everything went on fairly up to the delivery of the placenta, which came away naturally in half an hour. It was followed by active hemorrhage, for which I was in some degree prepared, as she had told me that she had violent floodings after her first confinement. The case was one of imminent danger for several hours, after which she made a slow and precarious recovery. This lady was subject to epistaxis; had, when a girl, bronchial hemorrhage; had also hemorrhage from her bowels; and upon one occasion, an apothecary, who applied leeches to her chest, had ultimately to use sutures before he could stop the bleeding. She was beautifully fair, and of a good make; no heart disease, or other organic affection.

CASE XI.—Mrs. ———. After a moderately quick delivery, and the placenta being expelled by fair pains, within

(a) This case occurred previous to the publication of Dr. Beatty's advice as to ergot as a preventive.

about fifteen minutes, smart discharges, as nurses term them, set in, which, in despite of treatment, continued at intervals for a couple of hours: one time getting less, and then increasing again. There were no clots, but a too free discharge of fluid blood. In such cases I always enforce strict quiet for some hours, and do not allow the patient to be stirred or moved. This lady became very urgent to pass water, and as she required to rise up to do so, I refused to permit it, as blood was still flowing very freely. She now stated she had not passed water for nearly ten hours, and as there was some fulness over the hypogastrium, not very definably felt through fat and doughy integuments, I left the room for a moment; she passed fully a quart of very hot urine, and when I returned the bleeding had ceased. Analogous cases have further satisfied me that in her case the bladder of warm water laid over the uterus kept up the bleeding.

CASE XII.—Mrs. O'K——, a delicate made woman, delivered of a large child, with strongly ossified head, and with face to pubis. The perinæum received a laceration of about half an inch, from which there was smart, continuous bleeding, which, after some time, induced faintness. The uterus was well and firmly contracted, and the bleeding was stopped by pressing a piece of waxed sponge against the bleeding surface. I had not at that time employed matico, but my experience of its use in bleeding from small vessels, within the last couple of years, would induce me to recommend it in a similar case. And from the violence with which the artery lying in the recto-vaginal septum pulsates in strong labour, I apprehend the possibility of a laceration involving one of its branches, that might, under such circumstances, warrant its being tied.

CASE XIII.—Mrs. M'G——, her fourth confinement; was delivered safely at the end of two hours' labour; placenta came away in half an hour. Went on well for two hours, save that the pulse continued irregular, and that there was a tendency in the uterus to feel soft at its fundus. I had risen from the bed-

side to wash my hands, when she exclaimed, "Where is that organ?—there is smoke in the room," and fainted. It seemed as the work of a moment, and yet I had a uterus to deal with which had suddenly expanded, till it held, perhaps, forty ounces of blood. I immediately expelled the blood, used cold injections, and there was no return of the bleeding.

CASE XIV.—Mrs. M——, the mother of nine children, stated to me that she always suffered from severe losses, and was subject to faintings after delivery. I was, of course, watchful. She had a good confinement, with free, but not excessive discharges. The placenta came away in fifteen minutes after the child. As the bleeding continued more freely than was satisfactory, I continued to watch her, keeping cold cloths applied, and the temperature of the room as low as possible. At the end of two hours her pulse still continued to vary, so that I made up my mind to remain in the house. At the end of five hours the uterus began to enlarge, and she had a fainting fit. Emptying the uterus, and injecting cold water into it, controlled the bleeding, and there was not any return. This case illustrates two points: the value to be attached to the pulse as a premonitor, or indicator of hemorrhage, and that there can be no rule as to when an accoucheur may leave his patient. The rule must be his own skill and judgment as to when he goes or when he stays.

CASE XV.—Mrs. C——. Saw her in consultation with the late Dr. ——. The case had been one of shoulder and back presentation, of twenty hours' duration. She was delivered by turning, immediately after my arrival, and the attendant physician found it necessary to remove an adherent placenta, after which she was carefully bound up, and a napkin applied. The nurse watched the napkins and the attendant remained at the bedside, and everything appeared to go on well. But in three hours after I was again summoned to see her, in consequence of a fainting-fit. The physician and nurse agreed there had

been no external hemorrhage, but the uterus was enlarged up to the umbilicus, and was full of blood. She never rallied.

CASE XVI.—Mrs. D—— had been delivered by a nurse, and was said to be doing well. Two hours after I was called to see her in a fit of syncope. I questioned the nurse as to hemorrhage; there was none, and she produced the napkins to vouch for her accuracy. They were but soiled after the ordinary manner, and there was no blood in the bed; but the uterus was full, soft, and above the umbilicus, pressure upon it, after the manner already described, expelled a large mass of clotted blood, when, cold water being injected, the uterus contracted to its natural size, and, under suitable treatment, the case did well.

CASE XVII.—Mrs. —— had been attended in her two previous confinements by eminent accoucheurs; but in both an adherent placenta had to be detached by manual skill. I expressed my hope that this would not occur upon the present occasion; I was accordingly carefully watchful, and, by the most cautious examinations, avoided injuring the membranes, which came unbroken to the os externum. I had my left hand upon the uterus, which I followed with it down into the pelvis, as the foetus escaped from the vagina, while, with a gentle and grasping motion, I moved the uterus upon its contents (the placenta); with the right hand I held the umbilical cord steadily, but not draggingly, making the cord a means of communication between my two hands. The placenta was expelled after a quarter of an hour of such manipulation, and the case did well.

CASE XVIII.—Was called to see Mrs. S——'s cook: case of smart hemorrhage; married three months; pregnant two months; os uteri slightly open, but hard; injected cold water; bleeding stopped; placed a plug in the vagina. Next morning, upon removing the plug to replace it with a clean one, an ovum in its bag, which was unbroken, came away after the

sponge; used the syringe and cold water; no bleeding. Was summoned to her upon the fourth day for very smart hemorrhage, and found a second ovum in the os uteri, but its bag was broken, the placenta remaining; the bleeding continued for a full week, during which the vagina had to be kept plugged.

CASE XIX.—Mrs. C——, aged 40, the mother of a grown-up family; was seized with violent bleeding from the uterus, some hours before I saw her; asserts positively she is not *en-famille*, though the uterus is as large as at the ninth month; the os uteri is open, the size of a sixpence, but hard and irritable under the finger; felt some soft, loose matter beyond the os uteri, which, upon removal, proved to be a mass of hydatids; used the cold injection; the hemorrhage ceased when I placed a plug in the uterus; continued to syringe daily for three days, at the end of which time she passed, with some uterine action, a *pot de chambre* full of hydatids, after which the uterus continued to bleed for a couple of hours, but was finally controlled by constant washings with cold water.

ART. IX.—*Observations on Nasal Polypi.* By WILLIAM COLLES, F. R. C. S., Surgeon to Steevens' Hospital, &c.

It is not my present intention to enter into a systematic description of the various forms of polypi, which are sufficiently known and described by authors, but merely to make some remarks on that form which is more generally met with in practice, and to point out, I hope, some improvements in its treatment.

Polypi are in general observed to occur at the middle period of life; however, no age or sex is exempt from the disease. I have seen it in a child of eight or nine years of age, and again I have known it to commence in a man of seventy. I have remarked it also in two persons in the same family.

Polypi are said to arise from the spongy bones; this, as a

general rule, may be true; but I have seen them grow from the septum and floor of the nose; and as it is a diseased state of the membrane, and not of the bones, that gives rise to them, we may expect to find them arising from all parts of the cavity. One great fault to be found with authors who have written on the subject is, that they do not sufficiently impress on the young surgeon the great probability there is that the disease will return, and that though he may have removed every particle of the growth by operation, yet in a space of time varying from two or three months to as many years, the patient will return with the nostril as full of polypi as ever; and not having been informed of the probability of a relapse, he will be inclined to attribute the unexpected recurrence of the disease to unsuccessfulness on the part of the operator, and to infer that he had not removed the entire of the diseased growth. The morbid condition of the membranes which gives rise to this growth may exist for a considerable time, and then cease, without any assignable cause.

I have known a girl who had both nostrils filled with soft gelatinous polypi, resembling a bunch of small grapes; they had distended the bones of the nose, always breaking in the forceps, and requiring a tedious operation for their removal. Yet in two or three months she would return with the nose as full as before. She at length got married, became pregnant, and the disease ceased to annoy her.

I have tried various topical applications after the removal of polypi: washes of various ingredients, and also powders to be snuffed up the nose, but I cannot say that I have seen any decided benefit from their use.

We should impress the patient, also, with the necessity of his having these growths removed before they fill up the nostril, and make pressure on the bones. Indeed it is only necessary to read the description of a patient given by Levret, and translated by Mr. John Bell into his work on this subject, to perceive what deformities even the most mild form of the disease

may produce, and how, if neglected, it may lead to a fatal termination(*a*).

These tumours are now in general removed by means of the forceps. We seize them as near the root as possible, and by drawing them out, and at the same time twisting the forceps, tear through their attachment. The use of the forceps is, however, liable to several objections: 1, Though we see the polypus plainly, yet when we introduce the forceps, the blades of the instrument and the surgeon's hand obstruct the view; 2, The opening the blades of the forceps is attended with pain, from the pressure on the sides of the nose, and often causes laceration of the mucous membrane; and, 3, If the nose be at all distended, so that the internal part is much larger than the orifice, we cannot open the forceps sufficiently to get one blade on each side of the polypus; we are therefore compelled to seize the polypus at its larger, or bulbous end, and are able to remove only portions of the tumour at each time; hence the operation is tedious and painful, and often attended with considerable hæmorrhage.

For the last two or three years I have been in the habit of employing, in this operation, an instrument which is free from many of the objections to the forceps, and which I first saw with Mr. Cusack, but was, I believe, originally described by

(*a*) A young man died at La Chartre three years after having had the small pox, from which period he had been affected with polypi in the nose. He had seven polypi in all: his face was shockingly deformed; he had a great bulging in the root of the nose; his eyes were removed from each other, by the swelling, to three times their natural distance, and seemed bursting from their sockets; the nostrils were expanded, and the nose flattened and extended, while the cheek bones were raised to the level of the nose; the head and face swelled to an enormous size; the ears were obstructed on either side; the tears flowed over the excoriated cheek, and sometimes pus burst forth from the fistulæ lachrymales on either side; his palate was so depressed that it lay on his tongue, and bulged so that the lower jaw was depressed; the mouth was kept perpetually gaping, so that the saliva dribbled constantly from the jaws; while the nostrils were distended by the bulbous extremities of two large polypi, &c. &c.

Dr. Robertson, of Kelso, in the *Edinburgh Medical and Surgical Journal*, for 1803(*a*). It resembles, on a larger scale, the snare for the removal of polypi of the ear, of which a drawing and description was given in a previous number of this *Journal* by Mr. Wilde. We open the wire at the end of the instrument, introduce the noose beneath the polypus, and endeavour to get it as near the attachment as possible; when in this position, by drawing down the handle of the instrument the wire is tightened round the root, and a very slight force, with some rotatory motion, will suffice to remove the entire polypus.

There is another point in the treatment of polypi on which sufficient stress has not been laid by authors: which is, that we should not always be anxious to remove the entire disease at one sitting. If the polypi are numerous and soft, we can readily remove the anterior ones; but the posterior polypi have been pushed up and compressed, so as to be with difficulty seen and seized; also, if there is any bleeding, the blood will flow and coagulate over those situated farther back, so that we fail to catch them with certainty. Whereas, if we defer their removal for a day or two, being no longer compressed, they fall forward, become distended, and are very easily snared.

There is another situation in which polypi are found, and from whence their removal is attended with much more difficulty; that is, when they project backwards, growing from the posterior nares, and extend behind the soft palate, occupying the upper part of the pharynx. I have seen cases in which polypi, in this situation, differed in no respect from those growing in the nostril, being numerous, soft, and very brittle, increasing more in number than in size, and presenting only a small portion of their extremity beyond the palate. In general, however, a polypus in the sac of the pharynx is a single tumour,

(*a*) For an account of this instrument see Mr. Wilde's original paper on Otorrhœa in the former Series of this *Journal*, (No. 72, for January, 1844). Mr. Wilde has also employed his slight instrument successfully for some time past for the removal of gelatinous nasal polypi.

of a much more solid consistence than those which grow in the nose, being sometimes of even a cartilaginous hardness. When small, the polypus often escapes detection. The patient is tormented with all the symptoms of obstruction of the nose, and frequent attempts may be made to seek for such, and even, perhaps, to remove some natural projection. The tumour, at first, cannot be exposed to view ; it is only by the touch that the surgeon can be aware of its existence ; hence we would recommend the surgeon in all cases, but especially where the symptoms of the disease have existed any length of time, to pass the finger from the mouth behind the soft palate, to satisfy himself of the presence or absence of obstruction in this region. If neglected, this polypus will grow to an enormous size ; it will push forward the soft palate, depressing the bones of the hard palate, so as to occupy the cavity of the mouth ; it will press on the tongue, impeding deglutition, especially of solids ; it will obstruct the voice and hearing, and even prevent the closing of the mouth. The patient, when asleep, will snore so loudly as to be audible to a considerable distance, and he will often start from his uneasy slumber as if suffocating.

On consulting the works of authors on the removal of these polypi, we would expect to find it easily effected, differing little from the operation on nasal polypi ; but when we come to operate we are surprised to find the case far different,—that their extraction is attended with many difficulties, and that we may fail several times before we at length succeed in removing them. Some of the older authors seem to have been aware of the difficulties, and they mention cases in which they were obliged to resort to the questionable proceeding of slitting up the nose, and dividing the soft palate to enable them to get at the tumour. We are told they may be removed either by the forceps or ligature, and some have given descriptions of instruments for tying these polypi. These latter are, however, liable to the objection that they must remain in the patient's mouth till the tumour separates ; during this time he is unable to close his jaws, as the

slightest movement of the instrument is attended with pain, and its constant pressure has caused ulceration of the soft palate.

When polypi, in this situation, are small, numerous, and soft, their removal may be attempted by means of a forceps, and we are directed to use one resembling the nasal forceps, with the blades bent at right angles. They are liable to the objection that, on opening them, we have to oppose the spasmodic action of the isthmus faucium, induced by the presence of the instrument; hence we cannot make many such efforts in this situation; and on closing the blades the uvula will be almost always forced between them, thus injured, and perhaps torn away; besides, from the shape of the forceps, we cannot twist off the tumour, we can only pull it, and, perhaps, break it; and even here we sometimes fail, as much of the force exerted on the handles of the instrument is lost at the angles; therefore, in this description of polypus, I would recommend the use of a curved forceps, the blades of which open, one in front, the other behind; this form of instrument would obviate some of the objections mentioned.

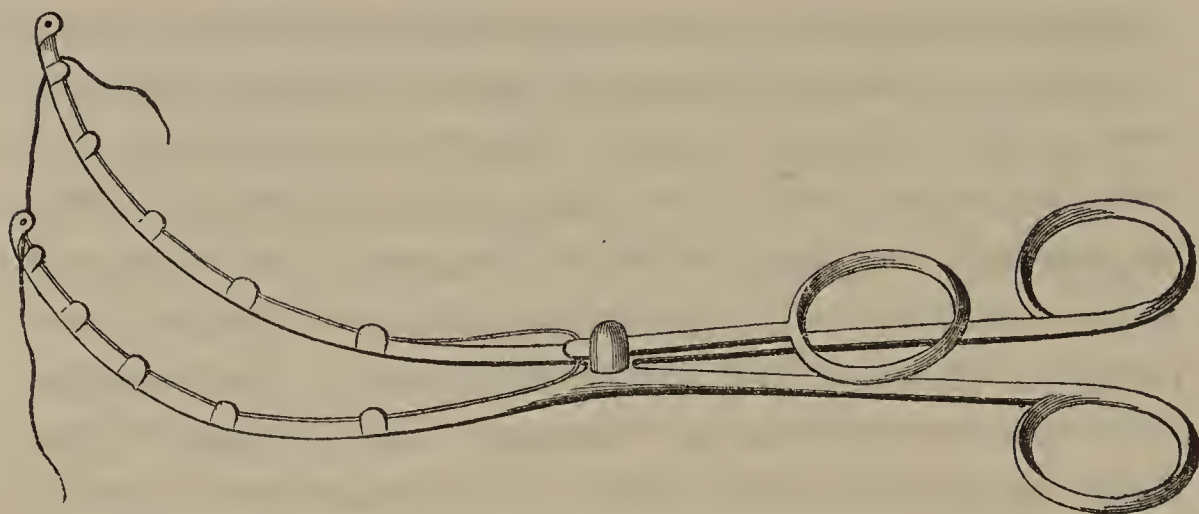
When the tumour is single, firm, and of any size, we should prefer removing it by means of the ligature: in the performance of this operation we will find little assistance from the descriptions of authors. Mr. John Bell seems almost the only one who appears to have studied and effectually treated this form of polypus. He indeed says the operation may be performed with much facility and certainty, yet when, further on, we come to read of the separate steps, we would be led to form a different opinion. He says: "I find not the slightest difficulty in this case in passing a silver wire through the nostril, and with the points of the fingers (thrust deep into the throat) raising it over the bulbous and more depending part of the tumour." He afterwards says: "But though harmless, the efforts necessary for noosing the polypus makes it a moment of great agitation and anxiety to the surgeon; his patient strains and suffocates during the attempt, however long it lasts; breathing is sus-

pended, the eyes are filled with water; the blood gushes from the mouth and nostrils, the fingers, or rather the hand, of the operator is driven deep into the throat, and the patient is held, staring and struggling, at once terrified for suffocation, excited to vomit, and alarmed and pained by the pushing of the operator, who is obliged to push his fingers deep before he even feels the tumour behind the palate, who grapples hard before he gets the lower part of it within the grasp of his fingers, and pushes still more violently, and struggles much, before he can pass the loop of the wire beyond and over it. You dare not keep him a moment in this situation: if the operator be once foiled, he may be so fifty times." He then relates a case in which he saw another endeavour to perform the operation: "More desperate struggles, I confess, I never witnessed; and when, after twenty attempts, I perceived it impossible he could succeed, I found it as difficult to disengage him from the patient as a mastiff from his hold, and seemed furiously resolved not to be defeated before a whole theatre of students."

The great difficulty of passing the ligature round this polypus arises from these facts:—the tumour grows from some part above the floor of the nose, and hangs down behind the soft palate; a ligature, therefore, passed along the nostril, and brought out at the mouth, will lie on these parts, and will be in front of the tumour. To pass it round the polypus, therefore, the noose must be passed from the mouth below, and then behind the polypus, and so expanded as to pass also on each side; but we find that there is a spasmodic action of the parts forming the opening between the mouth and pharynx, which is induced by the presence of the ligature or of the surgeon's finger; so that, no matter of what consistence the ligature is, or what shape we give the noose when in the mouth, when passing this part it will be closed, and thus remain in front of the polypus, and the difficulty will be increased in proportion to the size of the tumour.

In order to obviate, in some respects, these difficulties, and

to facilitate the operation, I have (with the assistance of Mr. Read, the cutler, of Parliament-street), and after various modifications, constructed the instrument here figured.



It resembles a curved forceps, so joined, that, on closing the handles, the blades separate; across the end of each blade a semi-circular notch is formed, sufficiently large to allow the ligature to move easily; this notch may be closed by means of a wire running in front of each blade, which can be passed across the notch by means of a ring moving at the hinge of the instrument.

In performing the operation the selection of a ligature is a matter of some importance: a metallic one is liable to snap across on being tightened or twisted, and a cat-gut one, on being moistened, becomes too pliable and apt to twist, therefore, as neither will answer singly, I generally make use of one of thin silver wire and cat-gut twisted together; this gives a firm, consistent, and strong ligature. This ligature is readily passed through the nose and brought into the mouth without the intervention of any other instrument. We double the ligature, give it a slight curve, and pass it along the floor of the nose; the patient will soon be aware of its presence in the throat, where it will produce cough, and some convulsive efforts; on opening the mouth we readily see it, and by means of the finger, forceps, or blunt hook, we can bring it forward into the mouth, when we apply the supplementary ligature to draw it back if necessary. We then open the apertures in the ends of the forceps, the blades being closed, put the ligature into the

open notch in the instrument, where we secure it by pushing up the wires. If the tumour be large and visible, it will assist the operation to pass a hook or forceps through the noose of the ligature, and seize the tumour, and draw it forwards and downwards; we thus render the tumour fixed, make room for the free motions of the instrument behind it, and allow the ligature to run smoothly over its sides; then, with the hook in the left hand, the surgeon passes with the right the closed forceps, armed with the ligature beneath and behind the polypus, and, depressing the handle, carries the ends of the instrument so as to be on a level with the insertions of the tumour; he then closes the handles, by which he opens the blades, and spreads out the noose of the ligature, when an assistant, gently pulling the ends hanging from the nose, causes it to glide along the sides of the tumour. By drawing back the wires, by means of the ring in the instrument, the ligature, thus set free, is left encircling the insertion of the tumour, and the instrument can be removed. It now remains but to fix the ligature, and tighten it so as to cause the death of the tumour; this is generally effected by means of the double canula, or, what I prefer, that of Græfe, where the ligature is fastened to a button, moveable along the canula by means of a screw, for with it we can tighten the ligature without twisting it or the canula, which latter proceeding is always attended with considerable pain to the patient.

Having thus effectually applied the ligature, and insured the subsequent separation of the tumour, there remains one important proceeding before concluding the operation; that is, to pass a ligature through some portion of the tumour, and leave it hanging from the mouth; for it has happened that without this precaution the tumour has separated while the patient was asleep, fallen into the pharynx, and, if small, has been swallowed, or, if large, has almost suffocated him.

With this instrument, or some modification of it, I have operated in four cases: in one the tumour was as large as an orange, and there was not room for the finger to get behind it,

even if the finger were long enough; in two others, one the size of a walnut, the other somewhat larger, it also proceeded most satisfactorily; in one small one I only snared half of the tumour, and I could not afterwards pass a ligature on the remaining portion of it, it was so small. This is the only case where the operation did not succeed perfectly.

The foregoing remarks refer to one form of polypus, of which there are different species;—it is that which is denominated the benign or non-malignant polypus, which, small at first, may increase without undergoing any alteration in its character so as to cause the death of the patient; it destroys solely by secondary effects, such as pressure on the brain, or some vital part. But besides this, I have no hesitation in saying that there is another form, a malignant polypus, which is malignant from its very commencement, and will most certainly end in the death of the patient, for its course cannot be arrested. Palliative treatment may render its progress slower, but severer measures will only hasten its fatal termination; it destroys not from its bulk, but from a malignancy inherent in its nature, which acts as a poison on the constitution. Of this description I have already seen three well-marked cases. I would not have made any remark on this form of polypus, but that Mr. John Bell, in his otherwise excellent work on this subject, denies the existence of it. He says a benign polypus may so increase as to destroy life, and hence may be termed malignant, and he uses much plausible reasoning in his endeavour to establish this as the only form of polypus, whereby he might lead an inexperienced surgeon to adopt the very erroneous notion, that in every case of polypus he may, with impunity at least, if not with benefit, resort to a severe operation for the removal of the tumour.

PART II.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

On Wounds and Injuries of the Chest ; being the Third Part of the Lectures on some of the more Important Points in Surgery.
By G. J. GUTHRIE, F.R. S. London, Churchill. 1848.
8vo. pp. 109.

THE volume before us, which forms the concluding Part of a series of valuable practical observations in the form of lectures, constitutes also the completion of the author's records of the surgery of the Peninsular War. The principal cases, therefore, illustrative of the several "important points" treated of, were furnished in the persons of the poor fellows whose blood has long since dried on the plains of France, Spain, Portugal, as well as the Netherlands. The author states, in the commencement of the preface, that the observations in this work "are published nearly as they were delivered on all practical points, in those Lectures on the Principles of Surgery which for thirty years were open to all the officers of the various branches of the Public Service." He then reminds all his former hearers who may read the book, as well as any who shall derive instruction and assistance from the precepts therein laid down, with what a well-grounded confidence he can now reiterate an advice so often urged in his oral addresses,—to follow steadily the rules which he had laid down, "until," he says, "you have reason, from your own observation, or from that of others, to doubt. A little further experience will then enable you to confirm what I have said, or to lay down in turn other principles, which, while they supersede mine, may be of more service to mankind." Having also reminded his readers that those rules of practice consisted in improvements arising out of the experience obtained in the course of the war, rather than a detail of doctrines of anterior date, he then proceeds to notice in review a number of circumstances connected with the hospital arrangements of the British army while the war continued.

That the perusal of these brief but interesting details affords material for sad and melancholy reflection, is indeed too apparent, when we find it stated that, notwithstanding the daily improvements in science, and the apparent efficiency of young, active, and intelligent surgeons, who were *ready* to use every means which humanity or skill could suggest, yet that many, too many, valuable lives were lost, owing to an utter inability on the part of the surgeons to get through more than a portion of the heavy mechanical labour by which they were overwhelmed; the duties which devolved upon them having been so arduous, and the number to perform the necessary duty so scanty; yet all the sufferers received their share of attention at the hands of the medical officers. How small was that share; how utterly inadequate, we must leave to the imagination of our readers; while we regret that it should be said of a period even so late as that of the Peninsular War, that a British soldier should perish for lack of the same medical aid which we now see every day liberally bestowed on the sick paupers in our workhouses; yet the fact is as we have stated. However, let us hope that the time may come when it may not again be said that a nation's best blood shall be lost through a similar defective arrangement, while, as we have said, there is abundance of time and care bestowed upon the pauper, who makes a compliment of submitting to the no less skilful, because to him irksome and unprofitable restraint of hospital discipline, that he may be relieved of some loathsome disease, whose exhibition was his source of gain.

These remarks do not apply to the entire period occupied in the campaign; on the contrary, we find that, when our troops had arrived at Orthez, or rather from the time they had passed over the Pyrenees, and had reached the Adour river, before the battle at Orthez, the medical department was pretty well reinforced, and the arrangements for the proper attendance of the sick and wounded were rendered tolerably perfect. The Duke of Wellington crossed the Adour early in the year 1814, and our countrymen fought their way through Orthez, Tarbes, and Toulouse, at which last place they gained a victory on the 10th of April.

“On all these several occasions, from the Adour to the Garonne, a sufficient number of doctors was forthcoming; and when the army moved forward from Toulouse, the medical department accompanying it was equal to the charge of the wounded of another battle, if one had taken place. The hospitals at Toulouse were left in the highest order. The French and English surgeons visited each other; every case of interest was thoroughly investigated; and the surgery

of the British army and of the empire dates much of its improvement from the facts elicited or confirmed on that occasion. And why was this so? Simply because the necessary means of every kind were at hand: the medical men were numerous, young, and efficient."

Within one year came the battle of Waterloo, at which it has been stated, and that too by British soldiers, who had witnessed the bloody conflict at Albuhera, and the murderous assaults at Ciudad Rodrigo, Badajoz, and San Sebastian, that they never beheld such wholesale slaughter as at Waterloo,—so obstinate and perilous was that conflict. With the killed, however, we have not to do, but the wounded—what became of them? They were as scantily supplied with surgical attendants as at the worst of times before, and the comparatively few medical officers who had charge of the wounded were, as before, overwhelmed with work, half dead from fatigue, and consequently but badly able to pay the necessary attention to the sufferers, much less to assist in the advancement of the science of surgery. The most strenuous efforts were made to obviate this deficiency; and although Flemish surgeons were employed,—although numerous amateur surgeons hurried over from London, anxious to be of use in a time of such urgency; and, in fact, all quarters aided in supplying hands to do the good work, the evil was only partially rectified,—the mischief of the past could not be recalled. "The result was, that the great battle of Waterloo, with its host of wounded, and its almost wonderful opportunities, added little to surgical science. I am not aware," the author continues, "of one single fact brought out, confirmative of any surgical principle, beyond what was known and had been practised in the south of France the year before."

Mr. Guthrie then goes on to comment on a similar melancholy result in our own immediate times, namely, in the four great battles lately fought in India; he very properly attributes the mischief, not to this commander or to that, but to the defective *system* which is pursued, by which the armies under all our great generals have suffered alike in this respect; "and their successors will also suffer, if the civil authorities of the country will not allow themselves to be guided in matters which they do not practically understand, and a knowledge of which they have not acquired in a manner to render it thoroughly efficient."

The first lecture opens with some useful remarks on the propriety of *surgeons* making themselves acquainted with the

medical treatment of internal diseases during the earlier years of their studies ; these remarks contain, in fact, a repetition of the opinions urged by the author nearly a quarter of a century ago in his introductory lectures. A general acquaintance with the phenomena presented by visceral disease is obviously of great importance to the surgeon, whatever may be the nature of the injury he has to deal with ; but in particular is such knowledge of value when he comes to treat a case of injury of the chest, whether it be a contusion of the parietes or a penetrating wound involving serious damage to the cavity or any of its contents ; for the author shows, by reference to original and cited cases, that an injury to the thoracic wall, without penetration, may give rise to a serious and even a fatal inflammation of the contained parts, of which Dr. Stokes's case (No. 10), was a remarkable instance. In this man, who died four days after admission into hospital, gangrene had supervened upon inflammation of the right lung, the effect of two several injuries inflicted upon the same part of his chest.

The author, in the course of his remarks on the value of abstracting blood early and largely in the treatment of pneumonia and pleuritis, gives rather an amusing account of his early experience of its efficacy, while stationed at Berry Head and in British North America. The young doctor, as he was called (he being but seventeen years of age), had to deal with men replete with youth, vigour, and cheap gin ; he, therefore, carried his depletory measures in every case at once to full fainting, and repeated the bleeding every four hours, or even oftener, as long as pain and dyspœna were complained of. This he found the essential part of successful treatment. Next in importance came nauseating doses of tartar emetic. He recommends mercury as a remedy of the greatest value in serious inflammations, such as pleuritis, " but of less value than tartar emetic in the first stage of pneumonia, than which it would appear to be more efficient in the latter period of the stages of hepatization and infiltration, though some physicians agree with Laennec, and place entire confidence in its efficacy in all." He always combines it with opium.

Our author's remarks on typhoid pneumonia, and on thoracic effusions, serous and purulent, are instructive and judicious ; the perusal of them, however, rather disposes our mind to the idea that they savour more of the desk than of the bedside. Mr. Guthrie, indeed, all through this book, takes frequent occasion to notice the writings of those who have devoted themselves more particularly to the *medical* department

of chest affections. He attributes the occurrence of pleuropneumonia, after amputation, to phlebitis and purulent absorption.

Speaking on this subject, he says:

“ I was the first, I believe, to draw attention in my work on *Gun-shot Wounds*, published in 1815, to the connexion which existed between the latent disease of the lung which may be called pleuropneumonia, somewhat resembling these complaints when of a typhoid character, and to its occurrence after the operations for amputation, for, although affections of the liver and even lungs, following injuries of the head, had been observed by Morgagni, Valsalva, Quesnay, and others, they were always considered to be accidental circumstances. I have also related, or referred to cases of this disease, and of purulent deposits, in the third edition of that work and its Appendix. It is evident that I then considered these inflammations of the lung, and purulent deposits in other parts of the body, to be dependent on the same cause, and I suspect they are both more intimately connected with inflammation of the veins, and the absorption of purulent matter, which may be deposited in the cellular texture of the body with impunity for a time, but which in the lung or pleura is followed by low inflammation, ending in death. The treatment, which, as far as I know, has been hitherto almost always unsuccessful, ought apparently to be conducted on the same principles as those which are adopted in typhoid pneumonia, or typhoid pleuritis, although the dissections I have made, or am acquainted with, authorize my saying, that these two complaints have been so combined, as to prove that in this particular disease they are not distinct affections. Mr. Rose drew attention to these depositions and affections of the lung, after injuries and operations, in a paper read before the Medico-Chirurgical Society in 1828, thirteen years after my first publication, and M. Marechal did the same thing in Paris, in the same year, both being one year after the publication of the third edition of my work on *Gun-shot Wounds*, and without adding anything to the facts I had stated, or to our knowledge on the subject; and it is a matter of surprise to me, that Dr. Townsend, in his able article on *Empyema*, in the *Cyclopædia of Practical Medicine*, should have noticed the labours of Mr. Rose and our continental brethren, without referring to mine, which preceded them by so long a period,—a point of no consequence, further than it may as well be known that the science of medicine is indebted for this fact to my record of the practice of the *Peninsular War*. Andral has been led to believe, that ‘during the period of profuse discharge, pus is taken into the circulation, and subsequently separated from the blood, as mercury, when injected into a vein, is found to deposit its globules in different parts of the body.’ It is impossible to say, even if this opinion should be correct, what may be the cause which leads to its deposition in particular parts. I have supposed it to be from its giving rise to irritation in one that

is weak, but that is not an explanation, although it may be the fact."

His ninth lecture treats at considerable length of penetrating wounds of the chest, and their consequences; after which come gun-shot injuries; and here we have five cases detailed, in all of which the upper part of the lung was wounded. These cases "are in general more dangerous than those of the lower part, from the vessels being larger, and from the greater difficulty with which any extravasated blood or fluid can escape." On perusing these five cases we find that they tend to shew that, notwithstanding the severity of the wounds, provided we have a healthy constitution to deal with, the amount of inflammation is perhaps less than we might have been led to expect.

Mr. Guthrie's comment on the cause of death in those who fall in duels, we give in his own words:

"In cases in which the external opening or wound does not communicate freely with the cavity of the chest, the principal danger arises from the inflammation of the pleura ending in effusion, which, if not evacuated, leads to the loss of the individual. It is the great fact to be attended to in the treatment of pistol-wounds of the chest, or those made by small balls which do not pass out. All the persons I have seen die from small balls, have died with the affected cavity more or less full of fluid. The *post-mortem* reports of all persons killed in England, in duels, by wounds through the chest, unwittingly attests this fact, as well as the insufficiency of the surgical treatment they received; and the necessity for the future for its amendment. It is in these cases that the stethoscope is most valuable; its constant use is indispensable whenever the respiratory murmur has been gradually yielding before the encroachment of the effused fluid, which, in the first instance, looks nearly like red-coloured serum. When this murmur ceases to be heard, except at what is the upper part of the chest, whatever the position of the patient may be, it is full time to enlarge the original opening, or to draw off the fluid by the trocar and canula."

The eleventh lecture contains several cases of important interest in several points of view. The case of General Sir R. Crawford (No. 129), who received a musket-shot wound at the storming of Ciudad Rodrigo, is one of them. In this case the ball had barely impulse sufficient to carry it through the thoracic wall, but not having force enough to penetrate the lung, it fell down on the diaphragm, and death resulted from inflammation and effusion. Mr. Guthrie gives eight cases in which balls either falling or being about to fall into the cavity, or being gradually dislodged from the bodies of the vertebræ or the inside of the ribs by the suppurative process, have come

ultimately to rest on the diaphragm in the angle formed posteriorly by this muscle with the thoracic wall, near the spine. Here they have sometimes been found, rolling in pus, or encased in a fibrinous covering, the result of long-continued disease. One of these eight cases (No. 118) was originally reported by Dr. Stokes in the former series of this Journal, from whence it is quoted.

The concluding lecture treats of hæmorrhage from wounded intercostal or mammary arteries, protrusions of the lungs through open wounds: and lastly, gun-shot wounds and other violence inflicted on the head and neck; this is not the least interesting part of the book, and one to which we wish especially to call the attention of our readers.

In fine, we must say that we felt considerable interest in the careful perusal of this concluding series of records of the surgery of the Peninsular War by Mr. Guthrie, to whose accurate and extensive observation in noting whatever is of practical importance, as well as to his faithfulness and zeal in communicating the results of his very matured experience, modern surgery is so much indebted, especially as relates to those affections and injuries with which it is chiefly, although not exclusively, the duty of the military surgeon to become well acquainted.

A Practical Treatise on the Diseases peculiar to Women. Illustrated by Cases derived from Hospital and Private Practice. By SAMUEL ASHWELL, M.D., &c. London, Churchill. 1843. Third edition. pp. 772.

ON the appearance of the First Part of Dr. Ashwell's valuable work, we directed the attention of our readers to its merit. Some apology is due to the author for our omitting to notice the subsequent Parts, and as our best *amende* we will set about it at once.

The First Part treated upon the functional diseases of the female economy,—amenorrhœa, dysmenorrhœa, menorrhagia, vicarious menstruation, chlorosis, leucorrhœa, hysteria, &c.

The Second Part opens with general remarks upon the history, symptoms, diagnosis, pathology, and prognosis of the organic diseases of the womb; and then follow chapters on indurated tumours of the walls of the uterus; premature labour in pregnancy complicated with organic disease; organic diseases of the cervix and os uteri; organic diseases of the mucous membrane of the cavity of the uterus; displacement of the

uterus; diseases of the ovaries; diseases of the external organs of generation; and the morbid consequences of undue lactation.

Taking these subjects in the order in which the author has placed them, we shall endeavour to lay before the reader a short abstract of Dr. Ashwell's opinions on some of the more important. The definition given of "tumours of the walls of the uterus, characterized by induration," is as follows:

"These are always either of fibrous, cartilaginous, or calcareous hardness, varying in size from a pea or a small nut to the volume of a pregnant uterus of the later months. They exert only a slight influence on the constitution, and frequently exist almost unnoticed, till, by their magnitude, they press upon neighbouring structures, mechanically interfering with their functions: inflammation and its consequences may then ensue. Their malignancy is denied by many; *but there is probably sufficient evidence of their belonging to the scirrhus variety of carcinoma.*"—p. 285.

The first part of this description applies very accurately to what are commonly called fibrous tumours; but, certainly, if Dr. Ashwell means to refer to these morbid growths, then the latter part, which we have put into italics, is, in our opinion, quite inaccurate. We have examined many specimens of these fibrous growths in their early stage, or when they have become cartilaginous or calcareous, and watched many patients labouring under them, and yet we have never, in any single instance, had reason either to consider them malignant, or in the least resembling scirrhus.

The author divides these tumours into, first, those which form externally, and protrude the peritoneal coat of the uterus; and, secondly, those which grow internally, and carry before them the mucous membrane.

The symptoms of each kind will, of course, vary; but generally they are trifling until the tumours reach such a size as to press on a neighbouring viscus, nerve, &c. Nay, even when large and stationary, they may interfere but little with the duration or the enjoyment of life. Such, however, is not the case with scirrhus tumours of the uterus. Nor is it always so with the fibrous growths:

"Occasionally, after months or years of inactivity, a period at length arrives when their growth and the results of it are so conspicuous and decisive as to demand all the prompt and efficient relief we are able to give. In such states I have found the iodine extremely useful, always except in utero-gestation."—p. 287.

At first sight we, probably, should have thought pregnancy

a very unlikely complication; but experience has shown that it is tolerably frequent, and very dangerous:

“The tumours soften during the later months; the increased vascular supply leads to inflammation; and death generally occurs, if the tumours be of large size, soon after parturition. These facts, and the inferences deducible from them, first, I believe, pointed out by myself, have now, I think, produced their just impression. Formerly, when they were propounded, and when premature labour, artificially induced, was, under certain conditions, proposed as the appropriate treatment for pregnancy so complicated, the remedy was regarded as of doubtful value; but of late the prejudice has greatly subsided, and the argumentative and practical observations of the late Dr. Ingleby, in his able work on obstetric medicine, have gone far to elicit the truth of my views, and to corroborate the practice founded on them.”

Having objected to Dr. Ashwell's view, that fibrous tumours are a lower order of cancerous productions, it is only fair to give his reasons:

“1. They possess the structure of compound adventitious cysts, the basis of this class of heterologue formations. 2. In the colour of the contained mass, and in the arrangement of the membranous septa or bands, the containing tissue, they are identical with scirrhus. 3. In hardness, occasionally justifying the application to them of the term stone cancer, they are not to be distinguished from the varieties of carcinoma already mentioned. 4. They occur very frequently in conjunction with growths of undoubted malignancy in other parts of the uterus. 5. And lastly, they possess one special attribute of malignancy,—incurability.”

Nevertheless we still agree with Meckel, Laennec, Andral, Lee, Carswell, and Bayle, in denying their malignancy; nay, we are inclined to think, with Bayle and Lobstein, that they are incapable of becoming cancerous.

The profession are greatly indebted to Dr. Ashwell for the extensive trial he has given to iodine with these tumours, the results of which are of great importance, and which our own experience amply confirms:

“I have used iodine,” he says, “in diseases of the body, mouth, and neck of the womb, and the different success has been precisely what might have been expected. In the walls of the uterus which are not glandular, it has generally restrained the activity of the disease, confining its bulk within the limits it had attained prior to its exhibition; and after watching some of these cases for several years, there has been no increase of the affection. The inferences I have drawn from the use of this medicine are as follows. *First.* Its in-

ternal administration, and its use by inunction, are decidedly beneficial; the advantage, if the remedy be judiciously employed, being rarely attended by any constitutional injury. *Secondly*. In hard tumours of the walls or cavity of the uterus, resolution or disappearance is scarcely to be expected, since the growths are adventitious or parasitic, and not imbedded in glandular structure. Here the prevention of further deposit—in other words, the restraint of the lesion within its present limits, and the improvement of the general health—will be the extent of the benefit derived.”—p. 293.

Of course, the use of iodine is not to prevent the employment of the ordinary remedies against irritation or inflammation excited by, or in the tumours, but it is a valuable addition to them.

So much for the first kind of tumour. Those situated more internally, and protruding into the cavity, are rare, according to our author; and when they can be touched during life, they are sensitive and painful; unlike polypi, i. e. polypi that have worn through the original layer of uterine tissue, to which, no doubt, the sensibility is owing. They also give rise to hemorrhage, as do polypi; but Dr. Ashwell does not believe that a fibrous tumour ever becomes a pediculated polypus, as many experienced men think. The principal points of difference mentioned by the writer are the structure, sensibility, and vascularity in the mode of growth, and number of tumours, the internal tissues, and the occurrence of pregnancy. But although all Dr. Ashwell's remarks are entitled to respectful consideration, we confess they do not appear conclusive to us.

The only cure for polypus is its removal, but we cannot so treat hard tumours; they may be enucleated, as has been done by Lisfranc, Professor Simpson, and others, but it is next to impossible to tie them. Quiet, self-denial, absence of all local excitement, an occasional anodyne, cold vaginal injections, mild aperients, with nutritious, but bland diet, are the principal remedies. Dr. Ashwell is favourable to the use of iodine, although he seems more doubtful about its success than in the former kind of tumours.

Now let us proceed to notice some of the diseases of the os and cervix uteri. There is a short notice of *uterine congestion*, which is valuable. The local symptoms laid down by the author are:

“Fulness and weight, with dull pain not increased on pressure, in the hypogastric region; a sense of uneasiness about the neck of the bladder, and at the anus; occasional hemorrhages, especially after exertion or sexual intercourse. On vaginal examination the uterus will be found distended with blood, imparting to the finger

a swollen, doughy, œdematous feel; generally it is prolapsed, the cervix spongy, and the os patulous; but there is rarely tenderness or heat. The speculum shows the injected, shining, and venous colour of the parts, and a slight exudation of blood is frequently seen in the cervix."

The constitutional symptoms vary: sometimes there is very little complaint, in others,

"Frequent febrile attacks, slight rigors, flushings, headach, nausea, and despondency; the mammæ often painfully sympathize, and become suddenly larger and tender on pressure; hysteria is common."

The treatment is simple: rest; hip baths; scarification of the cervix, or a small bleeding; counter-irritation, &c.

But if this congestion be permanent, or often repeated, a state of hypertrophy of the uterus may be the result, with very little change in the symptoms; or, if it be confined to the cervix, it will constitute the first stage of a very common disease,—erosion, or superficial ulceration, in which we shall find most of the symptoms enumerated above, with some additions, such as local heat and tenderness; leucorrhœa, sometimes acrid; scalding in making water, &c.; very often, indeed, the real symptoms are very slight, the broken health of the patient and the leucorrhœa being alone complained of. Dr. Ashwell notices three forms of ulceration: erosion, granular ulceration, and chronic ulcer, which he thinks the same as the one about whose malignant or non-malignant character Dr. Evory Kennedy expresses himself as having been doubtful for some time.

In addition to the causes usually enumerated, Dr. Ashwell mentions one which deserves consideration:

"Sir Astley Cooper used to say that, in some cases, he was almost sure that the male semen continued partially vitiated and unhealthy for years, after the cure of syphilis; and I cannot help believing that, in *some* instances, there is in the male semen, independently even of this cause, a peculiar element of irritation. It is difficult in any other way to explain some of those unhappy results of intercourse, where, however sound and healthy the cervix and vagina may have been prior to connexion, no sooner has this occurred, than the series of symptoms described is produced anew."

In the treatment of ulceration Dr. Ashwell prefers cauterization, through the speculum, to injections, in which we fully agree with him. Nitrate of silver, the acid nitrate of mercury, oxyde of zinc, with general treatment, have succeeded in his hands. We would beg to recommend to him a trial of his favourite remedy in tumours, viz., a strong tincture or solu-

tion of iodine, applied to these erosions after an application of nitric acid, or acid nitrate of mercury. It is by far the best local application we have tried.

Of *malignant growths* from the cavity of the womb, Dr. Ashwell has seen two specimens unconnected with cancer.

“In one, an out-patient at Guy’s, which destroyed life by bleeding, the growth reached nearly to the cervix, being raised about a quarter of an inch above the surrounding tissue: but in the most of these instances, the productions were probably connected either with malignant polypi, moles, hydatids, or cancer.”

The principal symptoms are loss of blood from the womb, with burning or lancinating pains, without any ascertainable cause. The treatment is only palliative.

The same may be said of fungus hæmatodes of the uterus, of which our author has seen one example.

The chapters on prolapsus and inversio uteri are full of sound practical instruction, although they can scarcely be said to add to our information.

We find that Dr. Ashwell does not confirm the statements recently put forth as to the frequency of retroflexion and retroversion. It has lately been said to be one of the most common diseases of the womb, pregnant or unimpregnated. According to our experience, retroversion of the gravid uterus, though not very rare, is by no means very common; but retroversion or retroflexion of the unimpregnated womb, occurring as a disease, and giving rise to morbid phenomena, we regard as fully as rare. We do not dwell much upon the fact that we have not met with it frequently in many years’ practice, as that might be an invidious argument, and one of uncertain value; but we think it very doubtful whether simple retroversion (without congestion, erosion, or tumour) would give rise to any symptoms. In Dr. Beatty’s cases there was both congestion and ulceration of the cervix.

Dr. Ashwell observes :

“I have already remarked that there are practitioners who doubt the existence of retroflexion; and of late years, I believe, many cases of slight and unimportant uterine displacements have been most erroneously set down as examples of the anterior or posterior flexion; but that these affections really occur, I have not any doubt.” “Dennan’s views, as far as they go, are correct, and I can readily understand how rare an occurrence it must be in the puerperal state; but he was wrong in supposing it never occurred in any other condition. I have seen two well-marked cases, and in both the uterus was unimpregnated.”

Subsequently the Doctor adds: "I have carefully read all which has been recently published on retroflexion of the uterus, but I am still unconvinced as to the supposed frequency of this and the related forms of displacement." With regard to the value of the uterine sound in detecting their displacements, the author remarks:

"I cannot avoid thinking that this uterine sound not only detects but makes many of these supposed displacements. All practical men know that the uterus varies naturally in its position, in its degrees of mobility and immobility, and in the influence exerted upon it, as to position, by a loaded or empty rectum or bladder; and it must be kept in view, that the curve of this steel bougie may not be the curve of the uterus; and if, therefore, it is to be introduced at all (and I wish it was far less frequently so), the normal position of the organ thus spiked must be made to follow the curve of the iron instrument, entering, and thus unnecessarily intruding upon its cavity.

"If we contrast the symptoms of these supposed cases with the symptoms of real retroversion, retroflexion, and anteversion, the difference is very striking, and cannot fail to induce the conclusion that the uterine sound, an unusual degree of mobility of the uterus, and a too slight acquaintance with the normal varieties of the curve of the womb, have led to great error as to the frequency of these truly rare maladies. I am the more induced to make these observations by finding that the uterine sound and its twin instrument, invented by Dr. Simpson, for permanently fixing a piece of ivory inside the uterus, are not harmless, but when used, really do mischief.

"Two cases have recently come under my care, and I have heard of more, where the results arising from the use of this instrument have been very serious. Looking at it pathologically, I can scarcely imagine anything better devised for inducing disease. According to this practice, a piece of ivory, two inches and a-half long, is to be introduced into the uterine cavity, and its bearing must of necessity be on some part of the lining membrane, a surface ill adapted to support the pressure for two or three months together of such an instrument. The consequences may be supposed. One of the patients, from whom, after a long and distressing journey, I removed this ivory one-pronged fork, told me she had never been free from pain since its introduction. In addition, it had produced frequent and intense sexual excitement, preventing sleep for many nights together, and had kept up a constant leucorrhœal discharge. In the other example, during the two months this instrument had been worn, the sufferer, in addition to the previous complaints, had never been free from sanguineous discharge, lumbar pain, and frequent desire to micturate. In both, the speculum shewed that abrasion of the os and the ostium vaginæ had resulted from the use of the so-called uterine supporter."—pp. 634–6.

We have given this extract in full, because it is very desirable to apply the test of facts to any novel line of treatment which may be recommended for our adoption, and because the opinion of a man of Dr. Ashwell's standing and experience must carry great weight, and may, in some degree, counteract that tendency in young practitioners to adopt expedients hastily and indiscriminately. We ourselves do not estimate the uterine sound so highly as many of its advocates, neither do we think its indiscriminate application either so painless or so harmless as has been represented; but certainly, on the other hand, we willingly admit that there are many cases in which it affords valuable aid towards forming a diagnosis. Of the value of the uterine supporter, or pessary, whether of ivory or German silver, we can give no positive opinion from experience, but we should recommend great caution in its employment, on account of the irritation it would be likely to excite; at the same time, it must be confessed that we want an instrument which would keep the uterus *in situ* (in cases of retroflexion) without irritation.

Our space will only permit us to notice our author's observations on ovaritis, which he divides into acute and chronic:

"The former may be isolated, or a part of puerperal disease. When isolated, there will be dull pain, not in the hypogastrium, but deeply seated in one or sometimes both of the iliac fossæ accompanied with sensations of weight and heat, always aggravated by the erect posture, or by any sudden movement, or by defæcation. I have, indeed, known syncope induced by the severe pain consequent on getting up in bed to relieve the bladder. At first there is not much fever; but if the disease is not early checked, the pulse will become quick, the skin hot, and nausea and vomiting will occur. In some cases there is pain, not constant, but occurring in paroxysms, in the loins, and along the course of the thigh and leg of the corresponding side, if only one ovary be affected; and dysuria and tenesmus are occasionally present. If the disease has been neglected in its early stages, the ovary may become so greatly enlarged by the formation of matter in its substance, that it may be distinctly recognised by pressure in the iliac region. It is manifest, however, that this can only occur when its size is considerably increased; in other conditions, the transverse septum of the pelvis, formed by the expansion of the broad ligament, will preclude its ascent, and thus prevent such recognition. Examination by the rectum, recommended by Lowenhardt, will aid the diagnosis; but even here the size of the ovary may have greatly increased, or the finger may with difficulty distinguish it; and it should be remembered by those who seldom make these examinations, that the uterus is more readily felt than the ovary, and may easily be mistaken for it."—p. 641.

In addition, we have observed that when the inflamed mass is situated low down in the pelvis, the patient finds it not only painful on standing, but almost impossible to straighten out the thigh : when high up, it is more within the reach of an abdominal examination than is generally represented ; and further, that, as the ovary is seldom affected alone, the extension of the inflammation to the uterine appendages, by increasing the bulk (if we may so speak) of the disease, will facilitate the diagnosis.

Chronic ovaritis presents pretty much the same series of symptoms, but in a minor degree.

Acute ovaritis may terminate in the chronic form ; in resolution ; in extension of inflammation to the uterus, peritonæum, &c. ; and in hypertrophy, softening, and abscess, and the abscess may open into the peritonæum, iliac region, uterus, bladder, or rectum.

The treatment recommended is bleeding, general and local, diaphoretics, sedatives, and counter-irritation. If matter form, and the patient be much reduced, or the process tedious, Dr. Ashwell advises that the abscess should be opened. In addition, we have found great benefit from calomel and opium in the early stage, and from constant poulticing afterwards.

We have thus given a brief notice of portions of this valuable work, but we earnestly recommend our readers to study it for themselves. It contains the result of long and careful observation, extensive hospital experience, and private practice, and the author is a physician of sound judgment, clear intellect, and cautious practice. Not the least useful portion of the volume are the well-selected cases given in illustration of the diseases, and in confirmation of the opinions advanced, and the treatment recommended. If we have ventured to differ from Dr. Ashwell on one or two points, we do so with great respect for his professional attainments, and a candid acknowledgment of the claims he has to the confidence of the Profession.

Principles of Human Physiology. By W. B. CARPENTER, M.D., F.R.S., Lecturer on Physiology at the London Hospital Medical School, &c. &c. Third Edition. London, 1846. 1 vol. 8vo., pp. 776.

The Cyclopædia of Anatomy and Physiology. Edited by ROBERT B. TODD, M.D., F.R.S., Professor of Physiology and of General and Morbid Anatomy in King's College, London, &c., &c. London, 1848. Parts 31, 32, and 33.

GREAT as the progress of all the subjects connected with the science of medicine has been during the last few years, we believe it will be generally allowed that no one of them has made such rapid strides as physiology. Although the great improvement in this branch of medicine is, doubtless, ascribable to a great many concurrent causes, and not the least to the fact that the more recent investigations have been guided and carried on by those great inductive principles which have done so much for the physical sciences, yet it must be mainly attributed to the astonishing discoveries which have been effected by the aid of the microscope and organic chemistry. It is true that much has been done in minute anatomy and physiological chemistry, which the advance of discovery has required to be undone, and a great deal more of which is destined, no doubt, to suffer the same fate. It is true we have to lament over the discovery of many an imaginary structure in the former science, and the analysis of still more imaginary principles in the latter; but, making all those allowances, they are daily working a mighty change in the whole aspect of physiology. It is difficult to recognise the present science of physiology in the books of twenty years back. The phrases are as new as the principles. Where we talked of "vital principle" we now substitute "cell formation;" "sympathy" has retired before the talismanic influence of "reflex action;" "nuclei and nucleoli" figure in the pages where once a motley group of humours, animal spirits, organic agents, animæ, and so forth, held despotic sway. We have reason to congratulate ourselves on these great improvements; for, as in the earliest periods so at this moment, every real step in physiology will, we trust, be attended with an equally real advance in pathology and practical medicine. In this point of view we see the inestimable importance of the cultivation of a scientific physiology. We will not assert that practical medicine *cannot* improve but with the improvement of physiology; but we hesitate not to aver that its advance

must be slow and uncertain, and that its arrival at that perfection of which it is capable is absolutely dependent on the attainment of a similar condition of perfection by its great basis.

We think the profession owes much to Dr. Carpenter. Before the appearance of the book, the third edition of which we have placed at the head of this article, we were lamentably in want of an English work on physiology even nearly up to the state of the science as it then stood. A very slight inspection of the works of Mayo, Elliotson, or Bostock, will convince our readers of the truth of this assertion. And although Dr. Carpenter has, perhaps, not done so much as we may have fairly anticipated, in original investigation, we must award high praise to a man who has given us so complete a view of the actual state of the science. In the edition before us he has availed himself of all the more important facts which have been added to his subject since the date of the former edition. These additions are both numerous and important. It would be, of course, quite superfluous to mention them *seriatim*, the present edition having been already two years before the profession; but we shall pass in rapid review some of those which appear to us to merit attention.

We have in this edition an entirely new chapter on the "mutual relations of the different branches of the human family." This chapter is based exclusively on the researches of Dr. Prichard. Although the subject is, probably, treated as well as possible in the compass of five-and-twenty pages, we are not sure that this was a judicious addition. No one who really wants information on this most important subject would consult a work on "human physiology." We are aware that all our earlier writers have treated largely, in their systematic treatises, of the causes of the varieties of the human race,—a course in which they were justified at a period when our knowledge of these points was both scanty and imperfect; but it is now a very different matter. The "physical history of man" is a science by itself. It has grown to very formidable dimensions in recent times; much too great, we fear, to be compressed within the space we have just named. And we suspect Dr. Carpenter will not complain of a want of physiological matter to fill almost any amount of letter-press.

After some general considerations, our author proceeds very briefly to discuss the grounds for a discrimination of species. This has been always a source of difficulty equally to the botanist and zoologist.

"In our ignorance as to the history of the origin of the greater part of the dissimilar forms or races of organized beings with which

the globe is peopled, we are accustomed to regard two races of plants or animals as of the same species,—that is, as having had the same or similar progenitors, when they are not distinguished from one another by any peculiarities but such as the one may be supposed to have gained or the other to have lost by the influence of external circumstances during a long period of time. On the other hand, two races are regarded as constituting distinct species,—that is, are believed to have descended from dissimilar parents,—when a constant well-marked difference exists between them, such as exhibits no tendency to variation in the individuals of either race (being equally characteristic of every one), and is not effected by the lapse of time or by change in external conditions.”—p. 48.

This answers very well to the definition of Blumenbach, that animals may be considered as belonging to the same species, when they agree so far in their form and habits as that those points in which they differ may be referred solely to the effect of what he terms degeneration; while, on the contrary, when these differences cannot be referred to any source of degeneration, they must be considered as belonging to different species. We think Dr. Carpenter might have very properly added to his definition, “the producing, without constraint, a fertile progeny,” as Hunter and Fleming have insisted. The facts drawn from the phenomena of hybridity are daily becoming of more cogent application to this point; and, as we find a few pages further on, that “the most important physiological test of specific unity or diversity is derived from the phenomena attending the reproductive process;” and that “the general principle is, that beings of distinct *species*, or descendants from stocks originally different, cannot produce a mixed race, which shall possess the capability of perpetuating itself; whilst the union of *varieties* has a tendency to produce a race superior in energy and fertility to its parents;” we cannot doubt that Dr. Carpenter is fully aware of the important aid that may be derived in this very difficult investigation from the phenomena just named. We think Cuvier has well stated on this point, that we are compelled to admit certain forms which have perpetuated themselves since the origin of things, without exceeding these limits. And all the beings belonging to one of these forms constitute what we term a *species*; its *varieties* are some accidental subdivisions of the species. This will allow of the “degeneration” produced by temperature, climate, modes of life, diet, and some other analogous circumstances, while it affords a certain limit to them. The author then contrasts the canine and feline races, as examples respectively of what he terms “*variable* and *invariable* groups of animals,

nearly allied to each other," but adduces no facts with which we were not previously well acquainted.

The following is the general conclusion from the facts brought forward:

"It appears then that it is quite impossible to fix upon any difference of structural peculiarities as indications of the distinctness of species, until it has been ascertained by observation whether they are constant and invariable,—the races neither exhibiting any tendency to change in successive generations, nor showing any disposition to mutual approximation, by the occasional modification of the distinctive characters in the individuals composing them."—p. 50.

Next follows a section on the possible extent of variation within the limits of species. This section is illustrated by examples drawn from both kingdoms of nature. We have the very interesting proof of the organization of an entirely new race of animals, distinguished by certain physical peculiarities, disposed to become permanent under particular circumstances, in the origin of the *ancon* or *otter* sheep, in New England, already known to the public:

"In the year 1791, one of the ewes on the farm of Seth Wright, in the State of Massachusetts, produced a male lamb, remarkable for the singular length of its body, the shortness of its limbs, and the crookedness of its fore-legs. This physical conformation, incapacitating the animal from leaping fences, appeared to the farmers around so desirable, that they wished it continued. Wright consequently determined on breeding from this ram, but the first year he obtained only two with the same peculiarities. In the following year he obtained greater numbers; and, when they became capable of breeding with one another, the new race became permanent, the offspring invariably having the *ancon* conformation when *both* the parents belonged to that breed."—p. 51.

The Author then successively takes up the subjects of the extremes of variation among the races of men, and the value of physiological and psychological peculiarities, as specific distinctions; and the comparative peculiarities of the different races of mankind. In this latter section the various peculiarities, on the existence of which attempts have been so often made to found distinctions of species, are passed in review, namely: colour, the nature of the hair, and the configuration of the skeleton, particularly of the head and pelvis.

The influence of habits of life, continued through many generations, is illustrated by the instance of the Turks, who, it is well known, are descended from the nomadic tribes still inhabiting Central Asia, but who, Dr. Carpenter says, have quite

lost their original type, since they have obtained, with the fixed life, the civilization of the Indo-European race; but he has omitted to notice the fact of internal and extensive admixture of the Turkoman race with Georgian, Circassian, Arab, and other Caucasian tribes. On the other hand, we are furnished with an example of the possible amount of degradation which one of the higher races can undergo under the most unfavourable circumstances, in the condition of some of our own countrymen. The account is so interesting, that, though probably known to many of our readers in the pages of the *Dublin University Magazine*, we cannot refrain from giving it in full:

“On the plantation of Ulster, and afterwards on the successes of the British against the rebels of 1641 and 1689, great multitudes of the native Irish were driven from Armagh and the south of Down, into the mountainous tract extending from the barony of Fews, eastward, to the sea; on the other side of the kingdom, the same race were expelled into Leitrim, Sligo, and Mayo. Here they have been almost ever since, exposed to the worst effects of hunger and ignorance, the two great brutalizers of the human race. The descendants of these exiles are still readily distinguishable from their kindred in Meath, and in other districts where they are not in a state of physical degradation; being remarkable for open, projecting mouths, with prominent teeth and exposed gums; their advancing cheek-bones, and depressed noses, bearing barbarism on their very front. In Sligo and northern Mayo the consequences of two centuries of degradation and hardship exhibit themselves in the whole physical condition of the people, affecting not only the features but the frame, and giving such an example of human deterioration from known causes, as almost compensates, by its value to future ages, for the suffering and debasement which past generations have endured in perfecting its appalling lesson. Five feet two inches upon an average, pot-bellied, bow-legged, abortively featured, their clothing a wisp of rags,—these spectres of a people, that were once well-grown, able-bodied, and comely, stalk abroad into the daylight of civilization, the annual apparitions of Irish ugliness and Irish want. In other parts of the island, where the population has never undergone the influence of the same causes of physical degradation, it is well-known that the same race furnishes the most perfect specimens of human beauty and vigour, both mental and bodily.”—p. 63.(a)

(a) We have no desire to enter in this place upon the discussion of the general question of the physical alteration of the human race, from external circumstances; but there are some matters connected with the opinion expressed in the foregoing (so-called) quotation from our able contemporary, and with the use which Dr. Carpenter and others have made of it, which we think it necessary to note. The article from which this extract is taken is one of a series of most valuable and instructive papers, entitled “Attractions of Ireland,” which appeared from the pen of an able Irish writer, in the *Dublin*

The chapter is concluded by an enumeration and succinct description of the principal branches of the human family, but upon the consideration of which we have not space to enter.

In the present edition, Dr. Carpenter has given the account of the primary tissues in one chapter by itself, instead of being, as in the former one, included in that on nutrition. The importance of this subject evidently demanded such a change, and we must give the author all praise for the care with which he has brought together the most recent and best established facts bearing upon his subject. Of course a main feature in the chapter is the theory of cell formation, in giving which he

University Magazine for December, 1836. In the first place we have to accuse the physiologist of unfairly quoting the author on whose opinion he relies so much; for, instead of this paragraph being, as the reader might suppose, one continued and connected whole, consecutive in all its sentences, it is hammered out of no less than five different and perfectly distinct portions of the article, not always bearing upon each other, and, in two instances, referring to different races and localities, and extracted in detached fragments and mutilated scraps of sentences, here and there throughout the article, as Peter, in the "Tale of a Tub," fabricates "shoulder-knots" out of the will. Several words are also interpolated. In the second place, supposing that this quotation expresses correctly the opinion of the writer in the Magazine, it is by no means supported by fact, and, therefore, fails to assist the hypothesis of Dr. Carpenter. The writer in the Magazine, in order to prove his case, should have shown that the races which were driven from the north and south, westward towards Connaught, were a stalworth Saxon, or even Celtic people, of powerful make and great physical acquirements; and also that the country into which they were driven was but partially inhabited, or altogether a waste; instead of which he acknowledges that they were the "native Irish," such as still inhabit many parts of the northern districts (particularly Donegal), as, indeed, history leads us to believe they were. Moreover, the country into which they were driven was occupied at the time by a race similar in every respect to those just described, and with which, by intermixture, the comparatively few northerns (even supposing them to possess a high degree of physical conformation), must soon have become amalgamated. But we have the best possible proof that these characteristics of the native Irish, greatly exaggerated as they here are, were possessed by the aborigines of this country during the early Pagan times, for a sufficient number of skulls and skeletons of the early Firbolg and Tuatha-de-Danaan people have been discovered and preserved, to enable us to compare the modern with the ancient race: and the osseous character of both are sufficiently alike to prove the descent of the present *unmixed* native Irish (which are but few) from these early people just alluded to. Hunger, hardship, ignorance, misrule, and barbarism may stunt the stature, and debase the intellect; climate may, in process of time, alter the complexion, as in the modern Americans; bad feeding may protrude the abdomen of a pauper: but it has yet to be proved that external circumstances, without intermixture of blood, will change the form of the skull, pelvis, and femora, or alter the bones of the face. We could, moreover, prove the existence of English settlers remaining distinct for hundreds of years in some of the districts specified; of which the Joyces of Joyce-Country are notable examples. The discussion of this subject is a very inviting one, but unsuited to the present occasion. We think it right, however, to state the foregoing facts, with reference to the garbled quotation in the text, and the opinions of Dr. Carpenter.—ED.

has followed pretty closely the researches of Schwann and Schleiden, but with those modifications which the advance of the science has rendered imperative. The time has gone by for anything like profitable discussion of the merits of that theory, so fertile in its results. The main facts on which it rests are as well established as any in the whole domain of physiology; the hypothesis founded on them has itself indicated great discoveries. But sound observation, pathological(*a*) and physiological, requires certain modifications in the theory as first enunciated by its authors. In the first place, it now appears that their doctrine of original cell development was too restricted. Our readers are aware that this doctrine stated that, primarily, one or more granules or nucleoli appear, around which a *nucleus* is formed. This nucleus was considered of cardinal importance in reference to the future cell, and constituted the *cytoblast* of their phraseology. The next step was the production of a membrane, termed the cell-wall, between which and the nucleus is a cavity, the cavity of the cell. This cavity may or may not be filled with contents differing in character both from the nucleus and the cell-wall. According to Schwann, the nucleus is situated at some point of the inner wall. It is from such cells, further developed and undergoing various metamorphoses, that all organized products arise.

It is now perfectly well established that the *nucleus* is not indispensable to the formation of a cell. We can therefore no longer give it the ambitious title of cytoblast, or cell-former. Vogel(*b*) has described some bodies as occurring in large quantity in unhealthy suppuration, to which he has given the name of "non-nucleated pus corpuscles." These are bodies of an irregular form, and, after the application of acetic acid, leave only a few granules, and sometimes not even these, constituting "a species of cellular formation in which there are no pre-existing nuclei." We have seen pale cells also non-nucleated, in the exudation of pneumonia, but differing from the bodies described by Vogel, in being regular in outline, and in being of a larger size than pus-corpuscles. Another illustration of this mode of formation may be drawn from the development of the compound granular corpuscles contained in the exudation matter of pneumonia, and inflammatory softening of the brain.

(*a*) See Vogel's Pathological Anatomy, translated by Day, p. 118, *et seq.*, where Schwann's theory, in its pathological relations, is fully discussed.

(*b*) *Loc. cit.* p. 120.

Different opinions have been expressed by the various eminent pathologists(*a*) who have observed and described these bodies, as to the exact mode of their development. While Vogel (who appears to have drawn all his observations from the phenomena of pneumonia) considers the granules of which these bodies are composed to be formed within pre-existing, regularly developed, nucleated cells, which subsequently vanish, and allow the enclosed granules to separate from one another, and fall into irregular heaps,—in which opinion he is supported by Reinhardt; Henle, on the other hand, believes these bodies to be good examples of his third mode of cell development, in which the nucleus takes no essential part, or even may never appear, but where a large number of elementary granules arrange themselves into a spherical mass, around which afterwards a cell-wall is formed. And Bruch(*b*) agrees with Henle, that the large granular corpuscles frequently met with in cancerous growths are formed by an aggregation of granules, within which a nucleus is shortly formed, and the whole then becomes surrounded by a cell-wall. That this latter is one mode of origin of these corpuscles, we hold no doubt. Observations made on the phenomena of exudation in the substance of the brain have convinced us that the first step in the process here is the deposition of minute granules on the surface of the minute vessels, around which a cell-wall may or may not be subsequently developed, a nucleus not being visible at any part of the process. It is curious to find Vogel, after the very decided opinion we have just quoted from him, also stating: “On the other hand, I will not deny that occasionally the mode of formation may be reversed, namely, that isolated elementary granules may be first produced, which subsequently collect into groups, and finally become invested with a cell membrane.” Here, as in so many other cases, the truth lies midway. If we had only examined the exudation of pneumonia, we should have agreed with Vogel and Hughes Bennett(*c*); if we had only examined the exudation in ramolissement of the brain, we should have agreed exclusively with Henle.

Normal structures give us less dubious proofs of our posi-

(*a*) See Vogel, *loc. cit.* p. 157; Dr. J. Hughes Bennett, in *Treatise on Inflammation a Process of Normal Nutrition*; also in *Pathological and Histological Researches on Inflammation of the Nervous Centres*, p. 56; Supplement to Müller's *Physiology*, note, p. 118.

(*b*) Quoted in Supplement to Müller's *Physiology*, p. 119.

(*c*) We must state that this able pathologist has come to the same conclusion with Vogel, after his many careful observations on the phenomena of inflammation of the nervous centres; and expresses surprise that Gluge, in describing these bodies, has omitted to notice a nucleus.—*Loc. cit.* p. 56.

tion. We have already stated that Henle has described one mode of cell formation, in which the nucleus takes no part, and the large granular bodies of the colostrum may be considered good examples of the development of cells without a nucleus. Illustrations of this fact may also be drawn from the chorda dorsalis of fish and reptiles; here, as in cryptogamic plants, a single minute spherule first appears, which soon becomes a distinct vesicle, and is rapidly extended into a cell. Vogt(*a*), too, appears to agree fully with Henle, that the relation, in point of time, of the development of the nucleus to that of the cell, may vary in different cases, and gives the same illustration, the chorda dorsalis of fish, where "cells originate without the intervention of nuclei, which only make their appearance after the cells are fully formed;" though this author is fully alive to the real importance of the nucleus, which he speaks of as "an invariable constituent of the cell." One form in which cells may be developed is given by this observer, which is characterized by the coincident formation of the nucleus and cell. This is stated to have been noticed in the embryonic cartilage of the toad, where free nuclei, or cells unprovided with nuclei, could not be detected. When nuclei were detected, they were invariably surrounded by a cell-wall; and when cells were found, they invariably enclosed a nucleus. Martin Barry, who has done so much towards establishing the importance of the nucleus as a formative agent, has arrived at conclusions differing very much from the doctrines of Schwann. In reference to the cell, he states: "The substance of the larger body is not deposited around the smaller, but the smaller is transformed into the larger. The nucleolus becomes a cyto-blast, and the cyto-blast becomes a nucleated cell"(*b*). The same author states, in refuting Schleiden's observation, that the nucleus is absorbed "when it has given origin to the cell-membrane;" my observations, on the contrary, showed the nucleus to have a higher office to perform than that of giving origin simply to the membrane of a cell; that, instead of being "cast off as useless, and absorbed," the nucleus is the source of new substance,—a centre for the origin, not only of the transitory contents of its own cell, but also of the two or three principal and last-formed cells destined to succeed that cell; and, in fact, that by far the greater portion of the nucleus, instead of existing anterior to the formation of the cell, arises within its cavity."

(*a*) Supplement to Müller, p. 119.

(*b*) The Edinburgh New Philosophical Magazine, for October, 1847, p. 207.

And in another place Doctor Barry(*a*) apologizes for using the terms "cytoblast" and "cell" somewhat confusedly, on the ground that is difficult to say where the former ends and the latter begins ; where the *contents* terminate, and the enveloping membrane commences. Dr. Vogel(*b*) appears to have observed something similar even in pus corpuscles, "whose sharp external outline is sometimes absent, so that here we have no definite and limited deposition around the nucleus: the substance of the nucleus and the substance of the cell can be distinguished, but no cavity." These cases are termed by him cases of "cellular formation, in which a somewhat indefinite precipitation occurs around the nucleus." Dr. Carpenter fully coincides in this view of the relations of the nucleus to the cell :

"Frequently the nucleus does not make its appearance until the cell itself has been completely formed ; it is rather concerned with the subsequent operations which the cell performs, than with its original development."

We may observe that later researches have led to very discrepant opinions as to the importance of the *nucleolus*, or even as to its existence. While Henle doubts the latter, Vogel seems to hold it as non-essential to the cell. Barry talks of the nucleolus of authors as a *succession of objects*, occurring after the formation of the cell, and as caused by the refraction of light, dependent upon the condition and quantity of granular substance ; and is of opinion that the cytoblast of Schleiden has no nucleolus, but acquires a nucleolus before its formation is complete. Kölliker agrees with Schwann in his estimate of the part taken by this body in the early formation of the cell.

Almost every part of the original doctrine of cell development equally requires modification. We might instance especially the *position* of the nucleus, which is by no means so invariably *peripheral* as stated by Schwann and Schleiden, and which may vary (as proved by Barry in the germinal vesicle) at different periods of the development of the cell.

How far that doctrine was correct in stating that all the animal tissues are in the first instance developed from cells, Dr. Carpenter observes that:

"By subsequent research, however, it has been shown that this statement was too hasty ; and that, although many tissues retain their original cellular type through the whole of life, and many more

(*a*) Philosophical Transactions, 1841, p. 202.

(*b*) *Loc. cit.* p. 120.

are evidently generated from cells, and are subsequently metamorphosed, there are some in which no other cell-agency can be traced than that concerned in the preparation of the plastic material.”—p. 96.

In Dr. Carpenter's opinion, some forms of primary or basement membrane, the membrane of the egg-shell, and the simple fibrous tissues, the fibrous net-work formed in the buffy coat of the blood, and the bands formed by the coagulation of lymph upon an inflamed surface, are formed “by the consolidation of a plastic fluid which has been elaborated by cells”(a). And we suppose very few will now disagree with the latter part, at least, of this statement.

But that part of the cell theory which was most defective, as proved by almost daily discoveries, was its account of the *physiological* importance and destiny of the nucleus. We have seen that it held that this body was a vitally important *anatomical* element in the initiative stage of cell structure; we have seen, too, that its importance in this point of view was much exaggerated, and that it is not an essential agent in the very first steps of that process. But its character as a dynamic agent, or *organic force*, was completely overlooked.

It is to Dr. Martin Barry and Professor Goodsir that we owe, more than to any other observers, the recognition of this fact. The latter gentleman in particular has directed attention to it, and has illustrated its most important bearings in a wide field of anatomical and pathological observations. We are glad to find that Dr. Carpenter has alluded to these observations in his preface, and acknowledged the aid he has derived from Goodsir's researches; in fact we should state that, perhaps, the most interesting feature of this edition is their incorporation into the work. It is well remarked by Dr. Carpenter that,

“The nucleus, where it exists, appears to be the chief instrument in the functions of the cell; the cell-membrane having, probably, little else than the mechanical office of bounding or uniting the contents of the cell.”—p. 91.

And that the destination of the several forms of cells seems, in great measure, to depend upon the peculiar powers of the

(a) Vogel has advanced a similar opinion: “In those completely organized products which, in their perfect condition, no longer retain the cellular form, it is only rarely that any decided cellular formation can be detected during the period of development. Thus in the development of areolar and fibrous tissue, we certainly sometimes find cells which are prolonged into fibrils, but more frequently we meet with mere cytoblast without decided cells, and the blastema appears to be converted directly into fibrils.”—*Loc. cit.* p. 128.

nucleus. Some excellent observations, chiefly pathological, have been made on this subject by Mr. Paget^(a), who believes the existence of the nucleus is always essential to what is commonly called the formative power of the cell, or the organ developed from it. His arguments are founded upon the fact, that "there is no example of development, in either structure or composition, effected in the animal organism by cells which have no nuclei; while there are many instances in which nuclei, whether contained in cells or without them, appear to assume higher forms, or to be centres and sources of formative and reproductive power." This author instances tumours of rapid growth, which are formed, not of cells, but of cytoblasts or nuclei, and that when cells are formed they are not transitional but terminal forms, not giving origin, by further development, to any other structures; and that when the most perfect fibro-cellular and fibrous tissues exist, they appear very certainly to be formed under the influence of cytoblasts alone, cells having no existence in the structure. This agrees with the opinion of Vogel we have just quoted. The great predominance of "naked nuclei" in the early stages of scirrhus may indeed be considered as an established fact.

We may further adduce the researches of Henle, Barry, and Goodsir, as to the importance of the nuclei in the formation of *structure*. The first and earliest of these distinguished microscopic observers, it is well known, named some fibres "nucleus fibres," holding the opinion that they were formed out of the nucleus. Such are those of which elastic tissue is composed, the membraneous coats of blood-vessels, the fibres of involuntary muscle, and some forms of basement membrane. When this latter presents a granular appearance Henle supposes it consists of nuclei of cells, whose development has been arrested; or, according to Dr. Carpenter:

"In other words, such basement membrane is formed by the consolidation of the layer of the plastic element, that includes a large number of granules, which may serve for the development of new cells."—p. 95.

We must beg leave to dissent from this explanation of Henle's view. Dr. Carpenter has here incorporated Goodsir's researches with those of Henle, who did not contemplate the nuclei as developmental agents in this structure, but merely as mechanical elements. He has also similarly described the coats of the blood-vessels. Here, according to him, we have a

(a) Med. Gaz., July 23, 1847, p. 146.

structureless membrane, having imbedded in it rows of elongated nuclei, which appear to appropriate the adjoining strip of the membrane; the result of which is, that the membrane breaks up into a number of flat fibres, each bearing the row of nuclei after which it was modelled. Precisely the same structure holds in organic muscular fibre.

But although Henle considers the epithelial coat of the blood-vessel to be formed of cells growing round the nuclei in the innermost layer of the structureless membrane just described, he does not seem to have had so clear and definite an idea of the function of the nucleus in membranes as our countryman.

In Mr. Goodsir's(*a*) opinion, there is dispersed through the whole organism a vast number of what he terms "centres of nutrition," and elsewhere "germinal centres," and "germinal spots." Dr. Carpenter has frequently used these terms in the present edition; and, in fact, the doctrine of germinal centres is every day becoming more and more probable. By centres of nutrition Mr. Goodsir means "certain minute cellular parts existing in the textures and organs." He makes a distinction between the nutritive centres of the *organs* and of textures. Those of the latter are permanent; those of the former are, for the most part, peculiar to their embryonic stage, and either disappear ultimately, or break up into the various centres of the textures of which the organs are composed. From the consideration of the various phenomena presented by these centres, Mr. Goodsir considers them to be destined "to draw from the capillary vessels, or from other sources, the materials of nutrition, and to distribute them by development to each organ or texture after its kind;" so that, contrary to the old doctrine of nutrition, the replacing of the old materials of the frame is due, not to the ultimate vessels, but to the non-vascular portions of the textures, which have the power of selecting and laying down the materials of growth. The centre of nutrition with which we are most familiar is that from which the whole organism derives its origin, namely, the germinal spot of the ovum. Now as the entire organism is formed at first by the successive development of its parts from this centre, so the various parts arise each from its own centre, this being the original source of all the centres with which the part is ultimately supplied. From all which Mr. Goodsir makes the important inference, "not only that the entire organism consists of simple or developed cells, each having a peculiar independent vitality,

(*a*) Anatomical and Pathological Observations, Edinburgh, p. 1, *et seq.*

but that there is, in addition, a division of the whole into departments, each containing a certain number of simple or developed cells, all of which hold certain relations to one central or capital cell, around which they are grouped." These central cells absorb the materials of nourishment for all those in its territory while in a state of development, and pass them off when fully formed or arrived at that stage when their own powers suffice for their growth. A nutritive centre, anatomically considered, is merely a cell, whose nucleus is the permanent source of successive broods of young cells, which pass off in certain directions, and under various forms, according to the texture or organ of which their parent forms a part. The author of this most ingenious hypothesis has drawn his facts from anatomy, physiology, and pathology. We may take his account of the structure of basement membrane as anatomical proof of his position. Dr. Carpenter has given a slight sketch of this account.

Mr. Goodsir proposes to name this membrane "germinal membrane,"—he holding that it is a fine transparent membrane, having nutritive or germinal centres arranged at equal or variable distances in its substance, so that it consists of cells with their cavities flattened, their walls forming the membrane by cohering at their edges, and their nuclei remaining in its substance as the germinal centres. These membranes are only met with on the free surfaces of the parts or organs, and it is only on the free surface of the membrane that the developed or secondary cells of its germinal spots are attached. When fully developed, the secondary cells carry forward its anterior layer (which is always the thinnest), leaving the nuclei or germinal centres in the substance of the posterior layer in close contact with the blood-vessels. This appears(*a*) the universal arrangement, for in every instance the nucleus is directed towards the source of the nutritive matter, while the cell-wall (in secreting structures) is opposed to the cavity into which the secretion is cast. Barry has made similar observations, and has particularly referred to the peripheral position of the nucleus in the germinal vesicle(*b*) anterior to fecundation. Indeed on this circumstance, coupled with the fact that he has observed, or thought he has observed, a foramen at this point, he has founded the notion, for such we must call it, that the spermatozoon *penetrates* the ovum, and, in the language of

(*a*) *Loc. cit.* p. 33.

(*b*) Philosophical Transactions, 1840, Part 2.

Dr. Carpenter(*a*), that "this act (fecundation) consists in the introduction of some new element into the ovule, through the medium of the spermatozoa." Dr. Carpenter has very easily digested this observation of Barry. Some eminent embryological observers have found it a much tougher morsel. But this is not the only place in his work where our author has proved himself possessed of an easy swallow of any facts which can be made to square with his preconceived ideas. In this place, for instance, the observation quoted has a very pleasing effect upon the mind of the reader, after the remark that the

"Mysterious process of reproduction evidently consists, in flowering plants, of nothing else than the implantation of a cell-germ prepared by the *male* organs, in a nidus or receptacle adapted to aid its early development; which nidus constitutes the essential part of the *female* system."

Mr. Goodsir's(*b*) account of the structure of lymphatic glands and serous membrane, is equally illustrative of his views of the germinal centres. Lymphatic glands consist of a dense network of lymphatics, among which arteries, nerves, and veins ramify. The lymphatics may be classed according to their relation to the gland, as *afferent*, *efferent*, and *intra-glandular*. An afferent lymphatic consists of an external filamentous tunic, a middle fibrous tunic, and an internal layer of epithelium. But as soon as its branches penetrate the capsule of the gland, they lose their external tunics. In fact, the external tunic of the extra-glandular lymphatics, the afferent and efferent lymphatics, appears to leave them almost entirely at their entrance and exit from the gland. The middle tunic also, for the most part, begins to disappear from these vessels after they have penetrated the capsule of the gland. But not merely do the intra-glandular lymphatics lose the external tunic; their inner tunic, or rather what was the inner tunic of the afferent vessels, also undergoes singular modifications. In the first place it appears so thick and opaque, as with difficulty to allow the vessels to transmit the light, which have then the appearance of being stuffed with a granular matter. When accurately examined, these thickened vessels seem to be possessed of an extremely fine external membrane, and a thick granular substance which lines the membrane. In the substance of the membrane there are arranged, at regular distances, ovoidal bodies, hollow, and containing one or more rounded vesicles in

(*a*) Page 705, par. 900.

(*b*) *Loc. cit.* p. 44.

their interior. These bodies form a part of the membrane. The thick granular substance attached to its inner surface is composed entirely of closely packed, nucleated particles of about the $\frac{1}{3000}$ of an inch in diameter. From its thickness it encroaches upon the cavity of the vessel, leaving a comparatively narrow channel for the passage of the lymph and chyle, which channel is rendered somewhat irregular by the granular matter being more exuberant in some spots than in others. Now, it is believed by Mr. Goodsir, that the anatomical relations of the membrane, and its layer of nucleated particles, are identical with those which characterize the primary cells or membrane, and the secondary or secreting cells of certain glands. The oval vesicles in the substance of the membrane are *germinal spots* or *centres of nutrition*, and the membrane is a germinal membrane. And he thinks the spots on the membrane are the sources from which the germs of the nucleated particles of the thick layer are derived; they must, therefore, exert "a force" by which matter is abstracted from the blood of the neighbouring capillaries, for the purpose of developing a steady succession of nucleated particles.

In serous membranes the arrangement of the minute elements of the tissue, though differing considerably from that just described, is equally illustrative of the doctrine of germinal centres. Here there is placed beneath a stratum of nucleated scales, a germinal or basement membrane, consisting of flattened cells elongated in the form of ribbons. The nuclei or germinal spots of these cells are also elongated, bright, and crystalline. On the supposition that these germinal centres are the sources of all the scales of the superficial layer, each centre being the source of all the scales of its own department, then the matter necessary to the formation of these must pass from the capillary vessels to each of the centres, acted on by forces whose centres of action are the germinal spots.

Some of Mr. Goodsir's earliest observations were made on secreting structures and the intestinal villi. In his last edition, Doctor Carpenter gave an account of the minute anatomy and physiology of the latter, with which, indeed, every tyro in physiology is now acquainted. In the present edition we find a distinct chapter on "Absorption and Sanguification," in which this subject^(a) is included, along with the entire subject of the "Elaboration of the Nutrient Material;" and we must state our conviction, that it is one of the most important and valuable

(a) The structure of the intestinal villi will be found more fully treated of in the chapter on the primary tissues, page 132.

chapters in the Treatise. We shall do no more than allude to the facts that the intestinal villi possess a layer of germinal membrane under the epithelial covering; that in this membrane there are germinal centres of an oval form, at pretty regular distances, from which the epithelium appears to be reproduced. We may add, that the cells surrounding the lacteals, and which are the active agents of absorption, are produced from the vesicular extremity, or primitive nutritive centre of the villus, which itself originates in a cell. During the development of the villus, this spot or cell was employed only in effecting the growth of the organ. In the perfect animal, the formative function of the spot ceases; its action then becomes periodical,—active only during digestion.

Dr. Carpenter tells us that

“It is thought by Professor E. Weber, that the epithelial cells which cover the villus perform a preliminary office; the nutrient matter being first absorbed, and partially prepared by them; and then, being drawn through the basement membrane of the villus, into the special absorbent cells which form part of its substance. This seems the more likely, as we shall hereafter find that the epithelial cells of the placental tufts appear to perform a like function.” —p. 513.

We were somewhat unprepared for this statement of Dr. Carpenter's, that Weber's opinion was “*likely*.” The analogy mentioned is certainly a very loose one. Can he have forgotten that the casting off of the epithelium is a necessary preliminary to the special act of absorption, as mentioned by Goodsir(a)? We find at an early part of the Treatise, a plan of the intestinal villi, one of which has been delineated naked, or destitute of epithelium. Our author appears, therefore, to have been aware of this condition; but on this supposition we confess our inability to explain the paragraph quoted.

But it is in secreting structures(b) we observe most remarkably the physiological importance of the *nuclei*, or germinal spots. Not only are they the sources of the cells in which the secretion is contained, but there appears excellent reason for thinking they are the great agents of secretion. In all Mr. Goodsir's observations the secretion was observed in *nucleated* cells. In the liver of *patella vulgata* the bile is contained in the cavities of the secondary cells, which constitute the nucleus of the primary cell. In the fatty degeneration of the liver, first and

(a) *Loc. cit.* p. 9.

(b) See Carpenter, p. 633; Goodsir, p. 20, *et seq.*

so well described by Bowman, the nucleus disappears, while the cell becomes filled with drops of oil. Perhaps, as Paget has suggested, it may itself be transformed into the largest of the drops. There is an entire absence of the bile in the cells exhibiting this condition. The wall of the cell is unaltered in these cases. Further proof may be derived from Mr. Simon's investigations on glands without ducts, where a wide extent of gland function appears to be performed principally or entirely by cytoblasts, which renders it almost certain that these latter are the great agents in the elaboration of secretions(*a*). The secretion contained in the cavity of the cell appears, as Mr. Goodsir has stated it, to be the product of the solution of successive developments of the nucleus, which, in some instances, contains in its component vesicles the peculiar secretion (as in the bile-cells of the mollusc just alluded to), and in others becomes developed into the secretion itself, as in the seminal cells. This last remarkable phenomenon has been made the subject of observation by the brothers Goodsir, more especially by Mr. H. Goodsir, who has very minutely examined the seminal secretion in the decapodous crustaceans. These researches prove that the spermatozoa are derived from the *nuclei* of the secondary cells, and agree, with great accuracy, with the observation of Kölliker, that these bodies arise in the vesicular nuclei. We must refer to the original papers of Mr. Goodsir, or to Dr. Carpenter's treatise (which comprises a very exact account of these researches), for further illustrations of the anatomical and physiological importance of the nucleus and of the doctrine of "nutritive centres." We would especially refer to those parts of the latter work treating of the structure of epithelium, the placenta, and the glandular system.

In a different domain, that of pathology, we find equally clear proofs of the important part taken by the nuclei. In the cyst of a meliceritous tumour Goodsir(*b*) has found a germinal membrane with its germinal spots, whose function is to attract from the neighbouring capillaries materials for the growth of the internal cellular mass. The mass itself consists of cells, each having its own nucleus or germinal centre. The most external layer consists of flat cells about to close their existence, their nuclei having disappeared. In the fatty heart it is certain that, concurrent with the first appearance of fatty matter within the sarcolemma of the degenerated fibres, the out-

(*a*) Mr. Paget's fifth lecture in the Medical Gazette, already referred to, contains many interesting observations on the functions of the nucleus.

(*b*) *Loc. cit.* p. 108.

line of the nuclei becomes dim, and they lose their natural reddish yellow colour. In a more advanced stage the nucleus of the fibre cannot be seen at all; "its former place is indicated, if at all, only by some out of the narrow columns of yellow granules," (a) which are always seen, in the healthy state of the fibre, at the ends of the nuclei. At a later stage, when the sarcolemma appears nearly full of fatty particles, all trace of both the nucleus and these granules is lost. Here the sarcolemma is unaltered, as we found in the secreting cells the cell-wall unaltered. Though, therefore, we cannot prove, as beyond a doubt, that it is the failure of the nucleus which brings about the degeneration of the cell or fibre, the invariable concurrence of these two changes, and the frequent existence of instances in which the nucleus appears pale and fading before any fat is deposited in the cell, lead us to the conclusion suggested by Mr. Paget, that "it will be very strange if we do not before long find enough to prove that the defect of the nucleus is the *first defect*, and the essential condition of the disease."

Thus the nucleus is not, as imagined by Schleiden, "cast off as useless," or absorbed after giving origin to the cell-membrance; on the contrary, it has only commenced the fulfilment of its great destiny, which is simply to be the great formative and reproductive agent of the whole economy. And equally subservient is it to morbid processes, the characteristic element of a great number of which is, the development of nuclei and nucleated cells. If we carry our view still higher, and investigate the origin, the primal condition of the animal structure, we see, in the picturesque language of Barry, that "the rudimental embryo is the nucleus of a cell."

In his account of the central terminations of the nerves, Dr. Carpenter still adheres to the old view, that they end by loops, while he admits "some of the nerve-fibres appear to originate from the filamentous prolongations of certain ganglionic cells." Late researches have rendered it probable that this latter is the *only* mode of termination. Among these we may particularly refer to the observations made on the connexion of the nerve-fibres with the large vesicles of the ganglia on the posterior roots of the spinal nerves in some of the ray and shark families, and in the electric lobe of the torpedo (Harless). Here the external wall of the nerve vesicle is continuous with the neurilemmal tube of the nerve; and in the torpedo Harless has traced the fine internal part of the nerve into the nucleus

(a) Mr. Paget, *loc. cit.* p. 144.

of the internal cell, with which, he stated, it appeared to have sometimes *two* connecting fibres. The phenomena of the early development of the nervous system have been lately studied by Kölliker(*a*) and Schaffner, and have supplied additional evidence confirmatory of this view. In the earliest period of its formation nerve-substance consists almost entirely of roundish, mostly nucleated cells, filled with a finely granular material, and differing only from the nerve corpuscles of the adult animal in being smaller. As the development proceeds, but previous to the appearance of distinct nerve fibres, many of these cells send forth fine tubular processes, which unite with similar processes from other cells, and thus, in time, give rise to continuous nerve-tubules. In young batrachians a complete net-work has been observed to be formed in this way by the coalescence of the processes from branching cells. As the nerve tubules coalesce and increase in size, the walls of the cells from which they originate are gradually drawn out, and merge into those of the tubules, while their granular contents also become continuous and identified with the contents of the tubules (Schaffner). This agrees very exactly with the conjecture of Todd and Bowman(*b*), that "the processes of the caudate vesicle may, after passing some way, become invested by the tubular membrane and by the white substance of Schwann." The inference appears almost irresistible, that these fine radiating processes are of the same nature with the fine or pale fibres.

We think Dr. Carpenter has spoken more positively than the extent of our knowledge justifies about the *peripheral* terminations of the nerves by a series of loops. It has been lately observed that in the muscles of the frog the nerve tubes do not, as previously supposed, form loops at their terminations, but that beyond these so-called terminal loops minute ramified fibres extend, which seem at last to pierce the sarcolemmal tube, and are lost to view among the sarcal fibrillæ. In some membranous parts a similar arrangement has been remarked.

"In the membranous septa which cross the pillars of the electrical organs of the torpedo, the nerves, which are numerous and large, were at first supposed to end by plexus or reticulation; but here, and in the analogous organ discovered by Stark in the tail of the skate, a minute examination shows that the nerve tubes divide into much finer fibres, which are lost in the spaces between the net-work of tubes."(*c*)

(*a*) See Supplement to Müller's *Physiology*, p. 124.

(*b*) *Physiological Anatomy of Man*, p. 225.

(*c*) *Outlines of Physiology*, by Professor Allen Thomson, p. 153.

In the papillæ of the human tongue it is quite certain that the nerves end in loops of fibres, much finer than the tubular fibres composing the trunk and principal branches of the nerves. Other facts might be adduced to show the necessity of considerable caution in coming to a precise conclusion as to the peripheral terminations of the nerve-fibres, but these brief observations quite suffice to prove the importance of waiting for further investigation on this point.

We intended to discuss many more parts of the treatise before us. The chapter on "Absorption and Sanguification" teems with novel and interesting matter, upon the consideration of which want of space prevents our entering. In leaving our author we must state our opinion, that it is by far the most excellent treatise for the student we possess. While it contains all the newest discoveries in the respective subjects of which it treats, and which are admirably incorporated with our previous knowledge, every part of the work is characterized by an essentially practical tendency, the prime merit of a physiological treatise for the student.

We congratulate the Profession that the Cyclopædia of Anatomy and Physiology is progressing so rapidly that we may fairly consider its early completion a matter of certainty. Two numbers within three months, and a third within a couple of months of the last of these, have almost made us forget the slowness of the earlier Parts. This has been the only complaint against the distinguished Editor, and it has always struck us as being more of the nature of a compliment than the contrary. Dr. Todd has indeed very little to complain of in the way of criticism. All the ordinary praises of the reviewers have been bestowed so lavishly on the design and execution of this great work, that it has left nothing more for us to do than merely to *announce* the later Parts. We have great pleasure in placing at the head of this article the three last Parts, XXXI., XXXII. and XXXIII. We can give them no higher praise than that they sustain the character of those that have preceded them. The first of the three Parts contains the conclusion of Dr. Walshe's article on Adventitious Products. Like everything from the pen of that author, it is of high merit; though we must reluctantly confess we are not quite satisfied with this, as the *pronunciamento* of British pathology. There is scarcely a part of the article that does not leave a certain indefiniteness on the mind of the reader, very painful to one seeking precise information, and by no means flattering to the perspicuity of the author. We find Dr. Walshe observing in the first paragraphs of the article that the micro-

scope has rather tended to render confused and complicated the whole subject of pathology. It has obviously had this effect on his own mind. There is certainly a great jumbling of microscopic appearances and corresponding phrases on the one hand, and what he somewhat grotesquely terms "naked eye characters," and their obsolete phraseology, on the other, in the article before us. The section on Cancer is very far below the author's reputation. It would be difficult to imagine a more illogical and unscientific classification of the ultimate elements of cancerous growths than that given to us by Dr. Walshe,— "essential, *almost essential*, and merely contingent." Upon a little consideration, the phrase "almost essential" appears peculiarly absurd. An essence is a something, without which the thing of which it is said to be the essence cannot exist. The moment this latter takes place without the co-existence of the former, the essence remains no longer as such. An essential character is not produced by mere frequency, it is a *sine quâ non*. Pathology does not possess many "essential characters." A very frequent concurring circumstance does by no means become almost an essential character from the fact of its frequency. Essences admit of no gradation, no shading off. Anything not invariable and of necessity cannot be placed, in any degree, in the same category with them. We may just as philosophically speak of a thing being *almost a cause* of any other thing. Dr. Walshe considers fat as an almost essential element of cancer; because cancer has a great disposition to arise in organs of which fat is a main element? This is not even mentioned in the section; because cancer is in its very early stages associated with fatty globules and granules?—This is not pretended for an instant. But because "it has a tendency to be produced wherever cancer exists"! Is therefore inflammation an "almost essential element" of pulmonary tubercle, because it has a tendency to be produced under these circumstances? The whole paragraph on fat, in its relation to cancer, is extremely unsatisfactory. Its important relation in a curative point of view is not even alluded to, in spite of the well-known observations of Rokitansky on the spontaneous cure of cancer by a process of saponification.

In the section on Vegetable Parasites, Dr. Walshe treats, among others, of the remarkable vegetations of porrigo favosa, of which he gives a very good description. It is stated, that "attempts to propagate favus by inoculation of the sporules, the matter of the crust, and the fluid of the pustules, have failed (Gruby, Bennett);" from which it is attempted to be proved that the parasite is incapable of germinating except in

a special soil, and that the production of this soil constitutes the *essence* of the disease. Now, unfortunately, the latter pathologist quoted by Dr. Walshe has perfectly succeeded in inoculating a healthy gentleman of our acquaintance, a fact which, indeed, we thought the pathological world pretty well knew, and thus proved Dr. Walshe's "special soil of amorphous exudation-matter" not to be *the essence* of the disease; while the number of unsuccessful experiments proves the importance of the special constitutional state and "special soil." But this is quite another question.

We can particularly recommend to our readers the next article, on the Prostate Gland, by Mr. Adams, of the London Hospital, as being a clear account of the anatomical relations and structure of this organ. Under the head of Prostatic Concretions there is a very interesting description of some bodies only recently discovered. The original observations were made by Dr. Handfield Jones and Mr. Quekett. From the researches of these gentlemen it appears that these concretions are of extremely frequent occurrence, so much so, that the latter observer considers them "to be a part of the natural constituents of the gland or its secretion." We have examined them several times ourselves, and can testify to the truth of this assertion. They are formed within the follicles of the gland, and would seem to commence by a deposit of earthy matter in its secreting cells. They are, for the most part, of a finely mottled, deep yellow colour; ranging from $\frac{1}{600}$ to $\frac{1}{1000}$ of an inch in diameter. Their increase in size appears produced either by aggregation or by deposition in the form of concentric layers unequally developed; in the former case they mould themselves to the follicles, in the latter they present the appearance of an ordinary lithic acid calculus (Quekett). The latter is certainly much the more common mode of increase; the yellow concentric layers around a central nucleus being the characteristic form of the concretions, as we have observed them. Their chemical composition varies at different stages of their development, consisting at first of little else than animal matter, but afterwards acquiring calcareous salts, stated by Dr. Prout to be phosphate, with a little carbonate of lime. It is the opinion of Dr. H. Jones that these concretions undergo an early solution; yielding up their granular or amorphous contents to form a part of the secretion of the gland. But if they are not removed in this manner they become the nuclei of prostatic calculi. Here, as in so many other parts of our science, the microscope has given us important aid in strictly practical inquiries.

The Thirty-first Part before us contains several other excellent articles, which we can do no more than simply enumerate. They are: "Protein," by Mr. J. Bowman; "Pteropoda," by Mr. Rymer Jones; "Pulse," by Dr. Guy; "Quadrumanæ," an elaborate and most valuable article by Professor W. Vrolik of Amsterdam; "Radial Artery," and "Radio-ulnar Articulations," by Mr. W. Brinton; and "Ren" (which, we beg to inform our readers, means renal organs), by Dr. G. Johnson, of King's College. This last article is only commenced in this Part, and is concluded in No. XXXII. The author has divided it into three sections: the first treating of the comparative anatomy of the organ; the second, of its anatomy and physiology in the human subject; and the third, of its pathology. Dr. Johnson has not added to our previous knowledge of the subjects discussed in the first two sections; though we give him all praise for the lucid description of the organ in the human subject. Especially we would recommend to our readers the admirable description of the fibro-cellular matrix of the kidney, in which he has chiefly followed Mr. Goodsir's^(a) views. There cannot be a doubt that the want of accurate knowledge respecting this structure, and its precise arrangement, has been, as hinted by Dr. Johnson, a fertile source of the discrepancy in the several accounts by recent writers of the minute anatomy and pathology of this organ. We may also allude to the very careful description of the Malpighian bodies, in which will be found a discussion of the various opinions respecting their exact relation to the tubuli uriniferi. Dr. Johnson has for the most part given his adherence to Mr. Bowman's doctrines, of whose illustrations, too, he has very freely availed himself.

But it is in the third section, treating of the pathology of the kidney, that Dr. Johnson has given us some novel views of great interest. To this subject he has paid great attention, and has only recently favoured the profession with some valuable papers on this, one of the most obscure topics in pathology. Our limits will not permit us to enter upon the consideration of this section, at present; but this, with Dr. Gairdner's conclusive researches, together with other essays bearing on the same point, we hope to discuss as fully in a future Number as the importance of their matter deserves.

The next article in the Thirty-second Part is "Reptilia," by Professor Rymer Jones, whose contributions to the comparative anatomy department of the *Cyclopædia* form one of its most

(a) Edinburgh Monthly Journal of Medical Science, May, 1842.

interesting features. This part is concluded by a truly philosophical and learned article on "Respiration," by Dr. John Reid, which is finished in the next Number. We may already predict that it will be our standard authority on the subject. Part XXXIII. likewise contains the articles "Rodentia," by Mr. Rymer Jones; "Rotifera," by Dr. Lankester; "Saliva," by Dr. Owen Rees; "Salivary Glands," by Mr. Ward; "Scapular Region," by Dr. Benjamin M'Dowell, of the Richmond School, Dublin; "Scrotum," by Mr. Brinton; and "Secretion," by Dr. Carpenter.

Principles of Medicine, comprising general Pathology and Therapeutics, and a brief general View of Etiology, Nosology, Semeiology, Diagnosis, Prognosis, and Hygienics. By CHARLES J. B. WILLIAMS, M. D., F. R. S., &c. Second edition, considerably enlarged. London, Churchill. 1848. 1 vol. 8vo. pp. 533.

A Treatise on the Practice of Medicine. By GEORGE B. WOOD, M. D., Professor of Materia Medica and Pharmacy in the University of Pennsylvania. Philadelphia, Grigg, Elliott, & Co. 1847. 2 vols. 8vo., pp. 791 and 840.

A Dictionary of Practical Medicine. By JAMES COPLAND, M. D., &c. London, Longman. 1848. Part XIII., "Poisons" to "Rabies."

Methodus Medendi, or the Description and Treatment of the principal Diseases incident to the Human Frame. By HENRY M'CORMAC, M. D., Professor of the Theory and Practice of Medicine in the Royal Belfast Institution. London, Longmans. 1842. 1 vol. 8vo. pp. 574.

WHILE the English language abounds in excellent monographs on special diseases, a general work on the practice of medicine, to which the physician could refer with confidence as a guide in the difficulties by which he is often beset in the practice of his profession, has long been a desideratum. We have our Cyclopædia and our Library of Practical Medicine,—works, it is true, which shed lustre on medical literature,—but the various subjects treated of having been the labour of different writers, they are, taken as a whole, of necessity, unequal, and can only be regarded at best as a collection of essays. To this, of course, no objection could be made, were the authors all equally eminent; but while most of the contributors were physicians of

the very highest character and experience, some amongst them were not only unknown to fame, but, to judge from their writings, had not a sufficient amount of experience to enable them to decide on the value of the theoretical doctrines they propounded.

In a late Number of our Journal we have put upon record the high estimation in which we hold Dr. Copland's Dictionary, and we may now again express the pleasure with which we find an additional part, after so comparatively short a period, on our library table. His book is, indeed, a monument of labour, of industry, and of talent; written by a single individual, it is also free from at least one of the objections we have raised to the other great British works on practical medicine; but it has one great defect,—voluminousness. As a systematic treatise, deserving the careful perusal of every student and junior practitioner, we believe it to be unrivalled. The physician, however, engaged in the active practice of his profession, whether in private or in public life, requires a certain amount of conciseness in the volume to which he wishes constantly to refer: he cannot afford to wade through page after page of the history of disease, and of the opinions of the most celebrated authors, from Hippocrates to his own time, on pathology and treatment.

There are, indeed, almost insuperable difficulties to be overcome in writing a treatise on the practice of medicine suited to the wants of the practising physician,—completeness combined with conciseness,—clearness of arrangement with accuracy of detail,—a sufficient exposition of the science of medicine, with a full account of the results of experience,—are but a few of the necessary foundations on which such a book should be based. Moreover, how rarely do we find a physician of such general information, and with a mind so constituted, as to attain a knowledge of all the diseases to which the human frame is liable, sufficient to enable him to write a complete system of the healing art. Physicians more frequently devote themselves to the study of some special disease, or some class of diseases, and hence it is that our literature is so rich in valuable medical monographs. In addition to the knowledge, experience, and learning necessary, such a task also requires an extraordinary amount of confidence: to come forward as the teacher of an art, the difficulty of attaining even a slight acquaintance with which compelled the great father of physic to mourn over the brevity of life.

Instead, then, of wondering that a work on the Practice of Medicine, calculated in all respects to meet the wants of the

physician, has not been hitherto published, we should rather be astonished at the great ability and learning of many of those we at present possess. One other defect in many of them we cannot, however, avoid adverting to. For many reasons, treatises on the practice of medicine have been written most generally by those who have delivered lectures on the subject; and their writings, consequently, contain much merely elementary matter, which, however well-suited for the instruction of the student, is altogether out of place in a book of reference for the practitioner. This is more especially true as regards those works which purport to be composed of the author's lectures as delivered to his class, and for the incompleteness and elementary character of which the excuse is so generally offered of the nature of the audience for which they were originally intended. The easy, flowing style of such publications too often gives them a degree of estimation with the public much higher than their intrinsic merits deserve; and it is only when they come to be referred to as guides in some difficult point in the diagnosis or treatment of disease that their real value is found out. Of course, we do not include in this condemnation books consisting of lectures, which, delivered early in his professional career, the author has revised, probably re-written, after years of practice have matured his views and tested them by experience, before he gives them to the profession.

The recent rapid advancements in physiology and pathology have been of such a character as to cause an almost complete revolution in the doctrines on which the indications of treatment of several most important diseases have been hitherto based. While the principles of medicine have been rapidly undergoing change, the science of therapeutics, if it has not remained altogether stationary, has improved but very slowly, and this of necessity, for the latter depends so intimately on the former, that to render the results of experience of aught avail, they must be obtained from observations made on correct principles. We are, therefore, at present, arrived at a peculiar era in the healing art: general and special pathology have attained a degree of certainty, as extraordinary for the rapidity with which it has been acquired as for its perfection, yet the ultimate aim of all investigations in medicine,—the application of the results obtained to the prevention and treatment of disease,—is yet in its infancy, and offers a rich harvest to the diligent cultivator.

We have had no more careful inquirer into the truth of the new doctrines of pathology, and no more careful observer, than Dr. Williams, the second edition of whose work on the

Principles of Medicine is now before us. He has done excellent service to the profession in embodying in this volume a complete view of the elements of general pathology,—*of those general principles in the nature and treatment of diseases which are really fundamental in the practice of medicine.* As the first edition of his work was but very shortly noticed in the former series of our Journal, and as numerous and important additions have been made to the second, we purpose to call the attention of our readers a little more at length to some of the important doctrines contained in it.

By the *principles of medicine* we understand an account of all those alterations in nature, whether occurring in the component parts of the human body, or extrinsic to it, that may affect the prevention, occurrence, or treatment of every deviation from a state of health. It is evident, then, that if this definition be correct, the subject is one of very great extent, and the necessity of an intimate acquaintance with, at least, its leading doctrines, cannot be too strongly impressed on the student and practitioner of medicine.

Having defined his subject in a short introduction, Dr. Williams, in the first chapter, treats of Etiology, or the causes of diseases, under the division of predisposing and exciting, correctly excluding from consideration under this head the so-called *proximate* cause of disease, which, stamped with Cullen's authority, a very large portion of the profession, who look upon disease as merely an aggregation of symptoms, still describe as one of its causes, inasmuch as on it depend symptoms,—while, in reality, it is the very essential of disease. With this view Dr. Wood, of Philadelphia, whose extensive work on practical medicine, the title of which we have prefixed, may be looked upon as an exponent of the doctrines of the modern American school, concurs.

Under the section “non-cognizable agents,” are included endemic, epidemic, and infectious causes of disease. As regards the two latter, especially, much difference of opinion has always existed in the profession. Where to draw the line of demarcation between epidemic and infectious diseases is the great difficulty. (We think it would be better, and conduce to a simplification of the subject, if the profession would agree to consider *infection* and *contagion* as synonymous terms.) Just at present, when we are threatened with a visitation of cholera, the question is again sure to become a matter of controversial discussion, for, probably, with regard to no other disease are opinions so much divided. This is, indeed, already the case; for while we write a document has

appeared from the Irish Board of Health, which sets out with the assumption of cholera not being infectious. We do not mean to take up the consideration of this doctrine just here, but we cannot avoid expressing our opinion that the assumption is, to say the least of it, a bold one, with such evidence in existence as that adduced by Dr. Graves in the second edition of his Clinical Lectures, and continued in an original article in our present Number. Dr. Williams takes, we think, the most correct view of the subject, in believing that typhus fever, plague, cholera, and dysentery, may originate and spread both by infection and as epidemics. Even influenza, which must be regarded as the type of an epidemic disease,—overshadowing the earth like a cloud, as it has at all times invariably done,—we have known to evince an infectious character under certain circumstances.

The whole question of the causation of disease by this class of agents, is one of much difficulty, and requiring careful investigation. Even the production of *endemic* diseases is involved in much obscurity. How can the existence of the peculiarly destructive fever of Western Africa, and its restriction to that part of the world, be accounted for: physical circumstances precisely similar—so far, at least, as human knowledge can discover—to those on which it is supposed to depend, existing in many parts of the continent of South America and in the island of Borneo? How singularly permanent, too, is the impression made by malaria on the system. What a length of time does it take to get rid of the poisonous influence, and how readily is the morbid change reproduced by exposure to causes which would make no impression on a healthy individual. The inquiry is one of much practical importance, and can only be satisfactorily carried out by a lengthened series of investigations concurrently made by properly qualified observers in various parts of the world.

Dr. Williams proceeds, in his second chapter, to consider the nature and constitution of disease,—pathology proper. Of functional or dynamic diseases he describes, first, the *primary elements of disease*, that is, the condition of the primary constituents of the body; and secondly, the *proximate or secondary elements of disease*, the state of the vascular system and the nutrient function, both of which comprise two or more of the primary elements. Of the former, diseased states of secretion and of the constituents of the blood are among the most important. He agrees with Dumas and Liebig in believing that the chief secretions take place by the agency of chemical affinities, but controlled by vital influence. We cannot see

what necessity exists for this admission of chemical action as influencing the natural processes that take place in the living body,—this mixing up of a mechanical with a vital power. The power of secretion is now believed by physiologists to be a vital endowment of the ultimate cells or molecules of secreting structures; and this re-admission of the agency of chemical affinity can in no wise tend to a clearer elucidation of the subject, and may lead to a furtherance of those erroneous views in therapeutics which were the offspring of the Liebig school of chemical physicians.

The importance of a knowledge of the changes in secretion, as an element in disease, is evident from the variety and extent of the process in all animated beings. It is thus that matters which, if left in the system, would prove poisonous, are not only got rid of, but in some instances, while being removed, are employed by nature as useful agents: for example, the use of the bile in promoting the digestion of fatty substances, and in facilitating the healthy operations of the intestinal canal. The author considers the state of secretion, as it may be excessive, defective, and perverted. Excessive secretion of any kind may weaken, by acting as a drain on the system; it may also act *forwards*, as excessive secretion of bile, in causing diarrhœa; and *backwards*, by the effect produced on the organ which secretes, and on the blood from which it is secreted. A perversion of any secretion may accompany either its excess or deficiency; or existing *per se* is often a cause of disease. Examples of this are too familiar to need mention. It must be borne in mind, that any alteration from a healthy state of secretion affects *nutrition*.

The diseases of the *constituents* of the blood are also considered as depending on excess, deficiency, or alteration. As regards the proportions of the various constituents of the blood, Dr. Williams follows the statements of Lecanu, as adopted by Andral and Gavarret; but the more recent investigations of Becquerel and Rodier are, we think, more to be depended on, and differ from the former. According to the latter chemists, the mean composition of healthy blood, as deduced from eleven individuals, is, in 1000 parts: water, 779; globules, 141·1; albumen, 69·4; fibrin, 2·2; extractive matter and free salts, 6·8; fatty matters, 1·600(a).

The red blood discs being those on which the vivifying and

(a) *Recherches sur la Composition du Sang dans l'Etat de Santé et dans l'Etat de Maladie.* Par A. Becquerel et A. Rodier. Paris, 1844. Part I. p. 22.

calorific properties are believed to depend, their excess manifestly must be productive of general excitement of the vital properties. It is therefore indicative of inflammatory affections, fevers, diseases of plethora, and hemorrhage before it has become excessive. A simple test for this state of the vital fluid is given by the author,—the fine deep crimson which a thin film of blood gives on a white plate. A deficiency of the red particles occurs in, and is indicative of an opposite state of the system; it is readily detected by the pinkish or light purplish hue of a film of blood on a white plate. Altered states of the red particles are indicated both by the colour of the blood and the change in the form of the corpuscles, as seen with the microscope. The former is well exemplified in chlorosis, various cachectic affections, and diseases of the spleen; the latter, in congestive typhoid diseases, and in albuminuria. It is well known that in fluids of greater or less density than serum, they undergo alterations which are due to the processes of exosmosis and endosmosis.

The effects of diseased spleen in promoting the decay and retarding the formation of the red particles of the blood, are well explained by Dr. Williams. He believes it to operate not only by withdrawing an undue portion of the blood from the circulation, keeping it in a stagnant state, and thereby rendering it unfit for further use, but from the action of this *spoiled* blood, as a poison to the whole mass, when, after lapse of time, and under certain changes, it may again return into the general circulation, inducing those various kinds of cachemia or cachexia which follow malarious diseases.

The quantity and character of the fibrin in the blood have at all times been very generally employed by physicians as an important aid in diagnosing disease, it being the element of that fluid to which coagulation is due. It is always in excess in asthenic diseases, and in those of a true inflammatory character; in such, too, it coagulates slowly, contracting and separating from the red particles, thus producing the buffing and cupping of inflammatory blood. In tuberculous diseases, in which the red particles are deficient, it has been noticed by Andral and Gavarret, and confirmed by Becquerel and Rodier, that the fibrin is in excess. Deficiency of fibrin occurs in many diseases; and as venous blood contains less of this constituent than arterial, it is diminished in those affections in which venous blood predominates, as in asphyxia, impeded respiration from any cause, cyanosis, &c. Blood in which the fibrin is deficient is recognised by its fluidity when drawn from a vein, and by imperfect coagulation. Under such circumstances there exists

a tendency to asthenic hemorrhages, wounds do not heal readily, and fractures do not unite.

Why defect of fibrin should cause a tendency to hemorrhages, is believed by Dr. Williams to depend on want of spissitude in the blood; this being required for its favourable transit through the hydraulic apparatus of the circulation, want of that condition may give rise to various irregularities in its distribution. He is also of opinion that the various unnatural sounds or murmurs which in certain diseases are to be heard in the heart, arteries, and veins, may depend on this cause, thin blood being easily thrown into sonorous vibration.

The albuminous principle which is dissolved in the serum of the blood is generally believed to afford the material from which the fibrin (blood plasma) is elaborated. According to Dr. Williams, it is in excess in the active stages of most inflammations and fevers; but the experiments of Becquerel and Rodier give an opposite result, the albumen being slightly diminished in ephemeral fevers, and remarkably so in the phlegmasiæ(a). It is most remarkably deficient in disease of the kidney, with coagulable urine. Our author states that albumen is the principle least affected in its proportions by disease.

The oil, or fatty matter of the blood, is sometimes in excess; but this can scarcely be looked upon as an element of disease, inasmuch as it has been only noticed in connexion with a tendency to general obesity: deficiency of this constituent has not been observed.

The amount of saline matter in the blood received much attention when cholera first visited Europe. It was proved by the investigations of Dr. Stevens, Dr. O'Shaughnessy, and others, that these constituents of the blood were deficient in this disease; and they thus accounted for the obstructed circulation, lividity, and collapse: the water of the blood being also deficient. There can be no doubt but the injection of saline solutions into the veins temporarily checked these frightful symptoms; but this treatment was too purely chemical, remedying the immediate evil, but not removing the cause, and, consequently, the same state was rapidly reproduced by the excessive evacuations from the stomach and bowels. We cannot avoid thinking, therefore, that, in the advanced stages, the use of saline injections into the veins, combined with Dr. Graves' acetate of lead and opium treatment, holds out the best hopes of proving successful: in the early stage we would have no hesitation in trusting to Dr. Graves' plan alone.

(a) *Op. cit.* pp. 75, 77.

Dr. Williams next passes in review the changes produced in the blood by respiration, by excretion, from the transformation of chyle and of the textures, and from the presence of foreign matters; and then proceeds to speak of the proximate elements of disease, first considering the blood in circulation, as it may be defective—anaemia; excessive—hyperaemia; and perverted—cachæmia.

Under the second of these heads, inflammation is described. It is defined as “excess of blood in a part, with motion (of that blood) increased, and partly diminished.” By this definition the author means to express his view of the true nature of this important pathological change, viz.: that there is increased action, and, consequently, increased flow of blood, in the arteries leading to an inflamed part, while there is stagnation of blood in the capillaries and minute blood-vessels: a view that recent investigations and his own premises scarcely warrant, as we shall just now show. We think he is much more correct in the conclusion to which he comes, that the causes predisposing to inflammation are circumstances chiefly affecting the vascular system.

It is not our intention to enter into any argument on the nature of inflammation, a subject which has of late years, and more especially since microscopic investigation has become so universal in physiological inquiries, caused so much difference of opinion. Dr. Williams, we think, devotes too much space in a work on the principles of medicine to a purely physiological discussion, and we are not inclined to follow him; but we cannot permit his opinions on, probably, the most important practical part of the inquiry—the state of the capillary system in inflammation—to pass unquestioned. In his opinion the capillaries of an inflamed part have no share in causing the determination of blood which exists there, and which is one of the first manifest results of inflammation; this he believes to depend on increased action in the arteries leading to the part in connexion with the *vis a tergo* power of the heart. He seems to exclude altogether the *capillary power*, looking upon the enlargement of the capillaries as passive, caused by the expending of the circulating force conveyed by the arteries (p. 266). The whole question of the capillary circulation has been well considered by Dr. Graves, and also its important bearing on the treatment of inflammation(a). He believes the capillaries to have the initiative in inflammation, that “with them

(a) Clinical Lectures on the Practice of Medicine, edited by Dr. Neligan, Dublin, 1848, vol. i. p. 52.

commences the enlargement which afterwards extends to the smaller arteries, and from these to the larger branches"(a). His views are corroborated by the proofs brought forward by Carpenter(b); and that they are the true exposition of the change produced by inflammation in the local blood-vessels we have no doubt. The practical bearing of the question, as regards treatment, is too obvious to require observation.

We may here remark, that in the first volume of Dr. Wood's treatise a short article on the pathology of inflammation will be found; it is clearly and well written, and gives a concise and accurate view of the recent doctrines, and the results which may be looked upon as best established.

The fourth chapter of Dr. Williams' work is devoted to the consideration of structural diseases, or diseases of nutrition, full details of which are not given, the author conceiving that they belong rather to the department of morbid anatomy; but the chief forms of structural disease are "traced through the alterations in the function of nutrition which produce them." Under this head he treats of increased nutrition—hypertrophy; diminished nutrition—atrophy; and perverted nutrition, including induration and softening, transformation of textures, various deposits and morbid growths, concluding with an account of the disorders of mechanism.

The classification, symptoms, and distinction of diseases, constitute the matter of inquiry in the fifth chapter. We have in the last volume of our Journal (pp. 30 and 433) put upon record our opinion as to nosological classifications and definitions of diseases; and we are glad to find that Dr. Williams agrees with us as to the practical disadvantage of a symptomatic nosology. He admits the difficulty of forming a nosological arrangement founded on pathology, the natural basis, in the present incompleteness of our knowledge; but he thinks that it may be made subservient "to establish those divisions or subdivisions in which the character of its elements affords an obvious and natural means of distinction." He would thus divide diseases into *classes*, with regard to the organ or set of organs engaged, making a separate class of those diseases, such as fevers, which affect the system generally. In the division of these classes into *orders*, the pathology, or intimate nature of the disease, is to be taken into account; we would thus have diseases of function, of secretion, of nutrition, &c.: and a still further division into *genera* and *species* is made according to

(a) *Op. cit.* vol. i. p. 73.

(b) Treatise on Physiology, third edition, p. 568.

the precise anatomical seat of the affection. Our author illustrates this arrangement by taking as a *class*, diseases of the respiratory organs, of which an *order* would be functional affections; a *genus*, irritability; and the *species*, spasm and paralysis of the larynx, bronchi, &c. As regards general diseases, the subdivisions must depend on some pathological peculiarity; for example, fevers may be subdivided into inflammatory, eruptive, &c., and contagious, malarious, &c.

A classification of this nature we have been in the habit of employing for some years in our lectures, and of its great practical utility we are fully convinced. We also think that it forms a more intimate connexion between pathology and practice of medicine than any other that has been hitherto proposed; and while it brings prominently forward the great features of distinction between affections of different organs, the intimate nature of disease is not lost sight of.

The next section on Semeiology and Diagnosis is of much value; but as the author does not appear to have made any additions to it in this edition, we merely mention it to recommend it to the careful attention of the reader. The same remark applies to the sixth chapter, in which prognosis—foreknowledge of the results of disease—is made the subject of inquiry. This chapter contains a very complete description of the chief varieties of the modes of death, with an account of those symptoms which may become available as prognostic signs of the approach of dissolution.

The prevention of disease, which is treated of in the seventh and last chapter, is one of the additions, we are informed in the preface, to the present volume. Prophylaxis, the guarding against a single disease, belonging, properly, to special pathology, Dr. Williams confines his observations to hygienics, which term he prefers to hygiene, as more conformable to our language, and by which he understands the preservation of health. The circumstances which he considers as having this tendency are arranged under the following heads:—food, clothing, temperature, air, exercise, mental occupation, sleep, and excretion. Each of these topics receives a due share of notice, and under each we find admirable rules for the promotion of health, and, consequently, the prevention of disease. In so hackneyed a subject much novelty cannot be expected, yet we find many facts put forward in new points of view; and the important bearing of each is so clearly described as to attract forcibly the reader's attention. Thus, to give one example, when speaking of clothing, at p. 480, the effects which atmospheric electricity may produce on the healthy state of the human

body are glanced at. Further observations, we agree with our author, are needed, and, we would add, desirable to determine these points; but, in the mean time, his suggestion as to wearing of silk vestments next the skin should not be overlooked by those on whom this electrical action produces injurious effects. Silk, by its property as a non-conductor, has a considerable protective influence against electricity; moreover, by friction it excites electricity in the body itself, and the efficacy of this action in the treatment of many constitutional affections is well known.

Dr. Williams has appended to the volume now before us some extracts from an introductory lecture of his, which were prefixed to his first edition. His chief reason for so doing is, he informs us, to repeat to the profession a statement of what he considers to be the true reasons why practical medicine has not fully profited by the advancement of science. He is, however, evidently more influenced by the inquiry into the state of the practice of medicine, which occupied so large a portion of the concluding Numbers of the British and Foreign Medical Review, and which was chiefly promoted by Dr. Forbes, Dr. Combe, and by several anonymous writers. Their observations tended to the establishment of what they hoped would have proved a revolution in the science of the healing art, and which some of their more zealous votaries termed "*Young Physic*:" *young* it was surely well denominated, for it scarcely survived its birth. We have at present neither time nor inclination to renew this most unprofitable discussion, which, for a short period, gave a standing to empiricism in these countries, which, we venture to affirm, it would never have otherwise obtained; we more especially allude to the homeöpathic sect of quacks, or, as they were termed by their *Young Physic* allies, professors of a *rational* method of treating disease. We cordially concur with Dr. Williams in tendering the thanks of the profession to Dr. Symonds, of Bristol, whose letters to Dr. Forbes, published in the Numbers of the British and Foreign Medical Review, for October, 1846, and April, 1847, exhibited so ably the dangerous nature of the doctrines propounded by him and his new school.

Dr. Williams has, we think, done good service to the profession by his present publication. His character, as a practical physician, was already well established by his valuable monograph on the diseases of the respiratory organs, and by his contributions to the Cyclopædia and Library of Practical Medicine. That he is well versed in the science of medicine he has now proved, as also that he possesses the will and

the industry to devote his hours of leisure from the toils of a laborious profession to become acquainted with the daily improvements and additions to medical knowledge in which our age is so fertile.

The work of Dr. Wood, to which we have already cursorily referred, is in two thick, closely printed, royal octavo volumes. The author states that it contains the results of his public and private practice for nearly thirty years, and that he now offers to the profession the facts which he has accumulated, and the opinions he has formed, during that experience. As we have already remarked, we may regard it as exhibiting a view of the present state of practical medicine among our Transatlantic brethren; and the author evidently wishes his work to be viewed in this light, for the references to authorities throughout are chiefly to American physicians; and he expresses, in his Preface, the great aid he has received from the *American Journal of Medical Sciences*, "which comprises a body of the progressive medical knowledge of the last twenty years, especially of that contributed by the physicians of this country, which it would be difficult to find elsewhere."

As a pains-taking compiler and laborious writer, Dr. Wood is already known to the profession by his joint work with Dr. Bache—the *United States' Dispensatory*,—and the extraordinary amount of labour bestowed on the present volumes do full justice to this estimate of his character; but they do more, for they prove that he is a good practical physician, and a sound and judicious observer. The work professes to be a general treatise on the practice of medicine, and is divided into two parts: the first, which comprises general pathology and therapeutics, extends to 220 pages of the first volume, forming, as it properly should, an introduction to the second part, special pathology and therapeutics. It is divided into four chapters,—on the constituent forms of disease, etiology, semeiology, and general therapeutics; being thus analogous to Dr. Williams' book, whose plan, so far as the separation of this subject from the practice of medicine properly so-called—the description of special diseases—we prefer; it renders the latter less extensive, and tends more to fix the mind of the student on the advantages to be derived from a study of the former.

In so extensive a work as Dr. Wood's it must be expected that there are many points which would not bear too close a criticism; but the chief defect we see in it is, a manifest desire to extol the American school of physic at the expense of the

European. This is evidenced by the continued references throughout the two volumes to the writings or observations of his own countrymen, on very often the most trivial matters, and the no less general omission of any notice of British and Continental authorities, frequently on some important subject: indeed, as regards our own island, he seems to know little of our contributions to practical medicine,—at least he but very rarely notices them. To give an example: we do not find any mention of Graves' treatment of the cerebral complications of fever by tartar emetic and opium, or of the use of wine and the indications for it in this same disease, as laid down by Stokes.

Dr. Wood's observations on the treatment of disease we are bound to receive as the result of his many years' experience obtained in the active practice of his profession, yet there are many of them, certainly, not applicable to similar diseases in this country. To select an example from the affection we have just referred to—fever, we do not think that the Irish physician of the present day would subscribe to his views as to the employment of cathartics. He directs^(a) that in typhus fever the bowels should be kept open, throughout the whole course of the disease, by cathartics. They are indicated, he thinks, by the necessity which exists of avoiding accumulations of secreted matter in the bowels, so as to prevent its absorption; for he believes that it is probable the dark, offensive substances which collect in the alimentary canal in typhus act as a direct sedative to the system, and, therefore, cathartics, so far from increasing the debility, tend, if properly selected and employed, to obviate it.

Taken as a whole, however, we look on Dr. Wood's *Practice of Medicine* as a publication of very high value, written in a clear and distinct style, and the various subjects brought down to the present state of our knowledge. One of the few exceptions to this last commendation, however, we cannot avoid mentioning; we refer to the article on Bright's disease of the kidney, in which no notice is taken of Gluge's or Johnson's researches, which were surely made public in sufficient time for the author to have remarked on, as his volumes were not published until 1847. It is, in our opinion, notwithstanding, one of the best text-books for students in the English language; and we are glad to find that it can be had in this country at a very moderate price for so large a work.

Dr. M'Cormac's *Methodus Medendi* has, we know not how,

(a) Vol. i. p. 348.

escaped the notice of our predecessors in the editorial chair, and for this neglect of the publication of an Irish provincial medical practitioner we feel that we owe some apology. Under the very uninviting name which the author has thought fit to bestow on his work, we find a collection of essays on the principal diseases which fall under the cognizance of the physician, divided into eight classes, the basis of the classification being the anatomy of the parts affected. It thus forms an outline of the practice of medicine, exhibiting on the part of the author much judgment and acquaintance with the literature of his profession. His own experience, which is very extensive, is, in every instance, given to the reader, and the results he has arrived at, whether corroborative of, or opposed to the generally received doctrines, fairly stated. The author's style, though peculiarly quaint, is very clear, and we can recommend his book as one the perusal of which cannot fail both to interest and profit.

The Periodoscope, with its Application to Obstetric Calculations and the Periodicities of Sex. By W. TYLER SMITH. M.B., &c. Churchill, London. 8vo. pp. 47.

The Medical Practitioner's Private Register of Midwifery Cases.

BOTH these publications proceed from the same hand, and we think that Dr. Tyler Smith has conferred a great benefit upon the profession by each of them. If practitioners will procure and honestly use the Register, we shall soon have a very large and valuable body of facts accumulated, and we may then hope to find a little more definiteness than at present in the statements made by writers.

In this little *brochure* we have a cursory glance at certain periodical characteristics of the sex, such as the catamenia, conception, and the subsequent monthly epochs, quickening, the viability of the foetus, parturition, the lochia, mammary periodicities, and the reappearance of the lochia. For the better ascertaining and determining those periodicities, Dr. Smith has constructed the periodoscope, an instrument which appears to be likely to be very useful. We shall extract the author's own description of it.

"The small, moveable disc of the periodoscope contains the fifty-two weeks of the year, and it is also divided into thirteen lunar months, or ovarian periods. The circle beyond this contains a fixed scale of the catamenial periods, and the outer segment of a larger

circle contains a scale of 280 days, the normal duration of pregnancy, divided into the ten catamenial cycles of gestation. I mark five days upon the calendar as being the ordinary duration of the catamenia, but, as I shall have to repeat, in some women it is greater, in others less. Reckoning the catamenial period preceding conception, and the lochial period of parturition inclusive, I have figured in the instrument eleven catamenial dates, so that the outer scale really represents 285 days. The best mode of computing the time of parturition I believe to be this: we should find the date of the commencement of the last catamenia, upon which conception would, in ordinary cases, occur in a few days after the cessation of the catamenial flow, and we may then expect that the ovarian irritation or lochial flow which determines the occurrence of natural parturition, will commence with the sanguineo-mucous secretions, or with the uniform contraction of the uterus at the commencement of the eleventh catamenial date; and that labour will become fully developed on some one of the days of this ovarian period, or of the days in which the ovule would have descended the Fallopian tubes, supposing there had been no conception, and the catamenial discharge and ovulation had proceeded regularly. Thus the scale of calendar months being moveable, and the scale of lunar months, or ovarian periods, being fixed, all that need be done is to turn the moveable circle round so as to make the arrow at the word 'CONCEPTION' point to the date at which the last catamenia commenced, when the second arrow, at the other end of the scale, will point to the exact date when the commencement of 'PARTURITION' may be expected. The lunar or ovarian scale of pregnancy will also mark accurately the date of each of the periodic excitements which occur with more or less distinctness during pregnancy; so that we may at once, without the trouble of a moment's calculation, read off for the use of patients the probable time of parturition, and the dates when all physical irritation and causes of abortion are to be avoided. Of course, these remarks apply to strictly natural cases of uterogestation occurring in women whose catamenia appear every twenty-eight days. The only possible source of error, with an exact instrument, is, that fifty-two weeks only make 364 days instead of 365, and that leap-year always contains 366 days; but this is allowed for with the greatest ease, if it should happen that the pregnancy includes December and January, or February in leap-year; otherwise there is no mistake in the calculation of a single day. Any variation in the length of pregnancy from this standard is either before or after the proper time."—p. 12.

Our present object being to call the attention of the profession to this calculating machine, we shall not stop to notice one or two points of the physiology of this statement, from which we differ, but which may well be tested by its assistance.

The Midwifery Register contains columns for the different facts connected with pregnancy and labour; as name, age,

number of pregnancy, date of last menstruation, conception, expected labour, important occurrences during labour, duration of pregnancy, commencement of labour, presentations, occurrences during and after labour, date and hour of termination of labour, duration of labour, number of children, sex, and whether twins or not, weight and length of child, and occurrences within a month.

In our own case-book we have, in addition, a column for the age of the husband, the character of previous labour, number of children living and dead, the period of rupture of the membranes and of the expulsion of the placenta, and the length of the funis and the period of its desquamation. We think that Dr. Tyler Smith might advantageously introduce some of these into future editions of his work.

We heartily hope that it may have an extensive sale, and we think every practitioner of midwifery in England and Ireland should possess a copy, for we are sure that nothing would tend more to the improvement of practical knowledge and the advancement of science than such a register of actual facts, conned over by the practitioner, and afterwards published.

A Treatise on Diet and Regimen. By WILLIAM HENRY ROBERTSON, M.D., &c. Fourth edition, rewritten and much enlarged. Two volumes, post 8vo., pp. 355 and 353. London, Churchill. 1848.

WE noticed the appearance of the first volume of this work, on a former occasion, with approval. We have since read the second volume, and find reason to repeat our approbation. Like every book written on the subject, there are many announcements of opinion upon topics which are difficult to investigate, and have not, certainly, been ever strictly tested; but there are likewise to be found in these volumes many exact facts, an acquaintance with which will be found useful, and, under certain circumstances, indispensable. The subjects treated are numerous and important. The first volume is devoted to a general and particular consideration of human diet. The second volume contains seven chapters: one on muscular exercise; another on ventilation, climate, and change of air; a third on the hygienic effects of clothing; a fourth on bathing, ablution, &c.; and the remainder on mineral waters, sleep, the effect of occupations upon health, and on mental culture. Entering on the elucidation of matters so extensive, the author

has apparently availed himself of all the best works on each subject. He has judiciously selected and compiled the information thus placed within his reach, as far as the present, and has thus been enabled to produce a work which is creditable to his judgment, and calculated to prove serviceable to his readers; we, therefore, feel no hesitation in recommending these volumes to every one desirous of accumulating a choice medical library.

Having said thus much in praise of the work before us, we may be permitted to criticise the present state of knowledge on the subject of diet, as afforded to us in its pages; and we wish it to be understood, that in any observations which we may hereafter make, we do not intend to cast any blame upon Dr. Robertson. That gentleman has done all that could be expected from him, in affording a faithful transcript of the existing state of knowledge; he is not answerable for deficiencies which science has hitherto failed in supplying. If we are found, therefore, to cavil against certain doctrines contained in his book, it is with received opinions we quarrel, but opinions which Dr. Robertson was justified in bringing forward just because they are generally received. Without in the slightest degree blaming the author, we may be permitted to canvass whatever appears to us objectionable in his pages.

The first thing that strikes us is the exceedingly vague meaning attached to the word "digestible." Dr. Beaumont looked on digestibility as a question of time. He experimented on a vast number of substances, and according to the period they took in becoming dissolved in the gastric juice he judged of their digestibility. Thus, boiled rice dissolved in the stomach of Alexis St. Martin in an hour; roast turkey in two hours and a half; hard boiled eggs in three hours and a half; boiled salmon in four hours; and roasted pork required five hours and a quarter to enable it to dissolve. Well, if the time requisite for the solution of any particular substance in the gastric juice be what is meant by digestibility, these experiments are calculated to give us very exact ideas on the subject. But then, that digestibility does not merely mean solubility in the gastric juice, is evident from the following passage:

"The question as to the digestibility of cheese is by no means confined to that of its solubility in the gastric secretions, or its passage into the upper bowels."—p. 128, vol. i.

From this it appears that a substance may be very soluble and yet not digestible. The next sentence to the one quoted goes on to say, that

“Cheese is apt to produce crudity, and consequent irritation, in the intestines, and to affect the functions of the abdominal viscera, —sometimes inducing a relaxed, but more frequently a costive state of the bowels; and it may be on these accounts sufficiently objectionable, supposing that its primary digestion may occasion no inconvenience.”

Now as we do not know the meaning of the word “crudity” in the foregoing extract, it is possible we may not understand the sentence; but, as far as we are able to comprehend it, it seems to convey that a substance must not only be soluble in the stomach, but be also unproductive of inconvenience, to entitle it to the character of being digestible. In support of this explanation we may bring forward the statement made at page 128: “Animal fibre is not digestible in the ratio of its solubility, since veal and lamb are less easily digested than beef and mutton.” So that a something besides solubility is essential to the definition of digestibility.

The question becomes still more obscure when we find liquids, incapable of coagulation, talked of not only as digestible, but their comparative digestibility discussed. Thus, our author says, in p. 260 :

“In the tabular list of the different products of alcoholic fermentation chiefly made use of, the individual articles are classed in the order in which I believe them to be usually digestible.”

Now this is said introductory to the section on wines. Again, page 262: “Of the wines champagne is usually considered to be the most easily digested.” In this case solubility is left entirely out of consideration, for no one can imagine that champagne requires to be dissolved; nor can we suppose that *inconvenience* can either be taken into account, unless inebriety be considered comfortable,—for champagne will, without doubt, produce intoxication, if taken in sufficient quantity. The more we dive into the subject, the more difficult do we find it to be to define what digestibility accurately means. How are we to understand the following passages?

“There can be no doubt, as has been well and ably shown by Dr. Prout, that the digestibility of many substances is much impaired by their being offered to the stomach in a concentrated form; that honey, inasmuch as it is a weaker form of sugar, is by so much more easily assimilated than pure sugar; that cream or butter, when taken in the natural state of milk, are much less objectionable and injurious to the stomach, and task less the assimilating powers of the system, than when taken in the separated and concentrated form; that pure albumen, or pure gelatine, or pure fibrin, is, per-

haps, in every case, less easily assimilated than when in the state of natural dilution in which they severally exist in the ordinary articles of food.”—p. 129.

Now the foregoing extract, taken by itself, is intelligible. According to the views contained in it, stimulating matters are more digestible when diluted than when concentrated. But we cannot reconcile this with the following:

“The relative difficulty with which fish is so often found to be digested might possibly be referred to the larger quantity of water mixed with the albuminous matter.”—p. 141.

Why, in this case, it appears that dilution diminishes digestibility. In the following extract concentration is made to render aliments more easily digested.

“One of the most important of the uses of cookery is to adjust, and, in some degree, equalize, the condition of the several alimentary substances as to this matter. Animal food contains, in the first instance, as much combined water as is commonly required for the purposes of the primary assimilation; and the uses of the economy are sufficiently answered by taking any additional aqueous matter that may be required, either at the meal times, or at other periods of the day. Indeed, the modes in which meat is often cooked necessitate the removal from the meat of a considerable proportion of the aqueous matters; the animal fibre not seeming to be thereby rendered in any very apparent degree less digestible, provided this desiccating process is not carried too far.”—p. 143.

We have already acknowledged our inability to reconcile these apparent paradoxes. It appears that food is more digestible the more diluted it is; but fish is less digestible than beef or mutton, because it is more dilute; and cooking does not injure the digestibility of animal fibre by rendering it more concentrated.

The fact is, people talk and write too frequently without attaching any definite meaning to the words they use. Digestibility, assimilation, dyspepsia, are convenient words for covering ignorance, because they mean everything and nothing. What does any one mean by the digestion and assimilation of sugar? That which we know to happen to this substance when swallowed in moderate quantity is, that it is dissolved in the liquid contained in the first passage, just as it would dissolve in a glass of water, is then absorbed into the blood, and, lastly, oxidized in the capillaries. It is assimilated to nothing in the organism; it is no more digested in the stomach than it would be in a phial containing water, and placed on the mantel-piece. And what is meant by saying that honey is more easily assi-

milated than cane-sugar? Is it meant that the former is less likely to disagree with the stomach and bowels? We very much doubt if this be the fact. When the mucous membrane is in a natural condition, the ingestion of either in a moderate quantity is not followed by any inconvenience. If the mucous membrane be inflamed or irritated, diluted saccharine solutions are calculated to soothe it ; and when relaxed and enfeebled, the constant use of these substances will still further diminish the tone of the tissues. But no one, from these considerations, is entitled to predicate whether sugar or honey are digestible or not. Concentrated saccharine solutions act as laxatives ; and as they do not irritate, the probability is, that they are enabled to do so by causing mechanically an increased secretion into the intestines on the principle of endosmose. But whether this explanation be received or not, let us for the future use plain words with distinct meanings, and get rid of all vague or unmeaning phraseology.

Another subject which has attracted our attention, while glancing over the pages of the volume devoted to the subject of diet, has been the neglect with which the mineral constituents of food has been regarded by most writers on aliment. Dr. Aldridge has hitherto been the only person who has paid any attention to this branch of the subject ; which yet appears to us to be of every whit as much importance as any other. The proposition advanced by Dr. Aldridge is, that every constituent of waste must be replaced by the aliment in exactly equal proportion, otherwise that disease will be the inevitable result. He shows that the minimum quantity of muscle or of seeds necessary to supply the loss of the organic elements, is deficient in the proportion of sulphur and alcalies requisite for compensating the waste of those ingredients : while, on the contrary, the succulent parts of vegetables, although deficient in nitrogen, abound in those mineral substances that are wanting in seeds and flesh. He concludes that the most economical dietary should consist of a combination of seeds and flesh, to supply the organic constituents, with succulent roots, stems, or leaves, to afford the necessary mineral elements.

These views lead him, incidently, to conjecture that scurvy is dependent on a deficiency of sulphur and potassium in the aliment. This disease only appears in cases of restricted diet. On board ship, when the sailors are living on salt meat and biscuits ; in gaols, or similar institutions, where there is a fixed dietary, as in some late instances in Scotland, in which a certain quantity of milk was exchanged for treacle and water ; in times of scarcity, when the usual mixed diet becomes ex-

changed for a limited and purely seminal one, as some years ago in India, and more lately in Ireland. When the diet is not restricted per force, it may be virtually so through the influence of despondency; and, under such circumstances, the results are the same. Now it is notorious that there are two classes of prophylactics or remedies that have been found equally efficacious in the prevention and cure of scurvy, namely, fresh vegetables, and vegetable acids. Dr. Aldridge, regarding, perhaps too exclusively, the effects of the former, imagines that they prevent or cure scorbutus, by supplying the mineral elements which the diet would be otherwise deficient in. Others, looking to the influence of vegetable acids, conceive that it is to the want of those that scurvy is always due. Dr. Christison supposes that, in the Scotch cases to which we have referred, the disease was produced by a diminution of the albuminous constituents of the dietary: but in the series of papers in which he brings forward this hypothesis, he describes dietaries containing less albumen, under the use of which scurvy did not arise. These Scotch cases are, however, of interest in another point of view: milk cured the scorbutus which treacle produced, yet both are equally acidifiable when mixed with other constituents of the dietary: therefore it is not the want of acids which produces the disease. But milk abounds in all the mineral constituents of food; and these cases are certainly in favour of Dr. Aldridge's hypothesis. A very strong argument has, however, been adduced in opposition to Dr. Aldridge's views, derived from the analysis of the blood in scurvy; and that which renders this argument still stronger is, that Dr. Aldridge has himself borne testimony to the fact. In the Number of this Journal for November, 1847, are described some cases of both land and sea scurvy, by Dr. Neligan, to which are appended analyses of the blood by Dr. Aldridge; in these cases the quantities of sulphur and potassium were found to be at least equal to the average proportions contained in healthy blood. Now it has been argued that if scorbutus proceeds from a deficiency of the elements of the food, there ought to be found a corresponding deficiency in the blood, whereas the contrary is the fact. But even these data are not sufficient to set the question at rest, for there is no proof that the blood is the seat of disease in scurvy, while there is strong reason for regarding the muscle and cellular tissues as the parts principally affected. Now Liebig has shown that potassium abounds in the muscles, sodium in the blood; the former are acid in their reaction, the latter is alkaline. No comparative analysis has as yet been made of the muscles and cellular tissue in cases of scurvy and

in health; and until this be done the question must remain *sub judice*. It is possible that, although the average quantity of sulphur and potassium may exist in scorbutic blood, it may not be so as regards the entire system; and that this average quantity is essential to enable each part to attract to itself the quantity requisite for its healthy nutrition. Moreover, it may be, and the supposition is not without support from analogy, that the presence of a standard proportion of certain elements in each organ may be necessary for the production of essential compounds in the organ; for example, it may be that the presence of a certain amount of potash in the muscles may be requisite for the formation of the organic acids found in these organs; and it may even be the case that these acids when formed favour the abstraction of the alcalies required for their reproduction from the blood. These are questions which can only be resolved by the analyses which we have indicated.

But whatever opinion may be entertained as to the cause of scurvy, there cannot be a doubt as to the great importance of paying due attention to the mineral constituents of food. We know of one disease which essentially consists in a deficiency of iron in the system, and we know that disease can be cured by supplying the metal which was wanting. Without chloride of sodium being taken in sufficient quantity neither the gastric juice, the bile, the nerves, and the brain, nor indeed even the blood itself, can be perfected; without phosphate of lime the cartilages will never become transformed into bone. It was only the other day discovered that sulphur constitutes a large and essential element of the bile. Now it is important to know that all kinds of food do not contain these principles in the proportions which health demands; and it is, at least, reasonable to inquire whether diseases which at present we feel incapable of attributing to any particular origin, or even some of those which we now assign to very different causes, may not proceed from the defective nature of the aliment employed. We may here notice a very insidious, but most fallacious, objection that has been made to the opinion that succulent vegetables owe their utility in a system of healthful alimentation to the presence of a large proportion of mineral ingredients. The objection is this: dried vegetables contain the same quantity of mineral elements, but they are not equally efficacious with fresh vegetables, therefore the mineral ingredients have nothing to say to their utility. The answer to this objection is simply, that dried mineral substances are not by any means so soluble as when they are in a hydrated condition.

We shall now leave this topic and turn to another, to which

our attention has been directed by the article on climate in the second volume of the work before us. Physicians have been very much puzzled by the facts announced in modern works on climate, especially by those contained in the Army Medical Reports, to determine the best localities to which to send their pulmonary patients. It has been proved that phthisis pulmonalis is, if anything, more common in Malta, the Ionian Islands, Gibraltar, the Channel Islands, &c., than at home; and it has been argued, why should we send a pulmonary patient to a place the inhabitants of which are as much or more subject to the disease than we are ourselves? We do not deny that the choice of locality is a matter of importance; the means of comfort to be placed at the disposal of an invalid ought to be considered, as well as the chances of society and amusement, and the avoidance of such winds and temperature during his sojourn as might prove injurious. But we must, nevertheless, protest against the foregoing method of putting the inquiry. The physician does not send a phthisical patient to a foreign country, merely because he believes there is anything particularly salubrious in the nature of that country, or remedial in its climate, but because he knows that gentle travelling, and especially travelling by sea, increases the appetite, cheers the mind, and improves the strength. He knows that phthisis is an essential disease, and that if local complications can be controlled, and the powers of the system upheld, until the first energy of the diathesis becomes exhausted, he may hope that life may be indefinitely prolonged. Therefore it is that sea voyages have been recommended through all times in the treatment of this disease; they are to the consumptive like wine to the typhus patient: and it is little matter whether phthisical patients are directed to a place where the disease is commonly endemic or not, provided the patient does not during his stay expose himself to injurious influences, or remain so long as to exhaust that sense of novelty and enjoyment from which benefit is chiefly to be expected. We have alluded to this subject because we have known instances in which patients were prevented from going to places where they might have been pleasant and comfortable, and sent to situations where they remained for months solitary and joyless, owing to opinions founded on the principle which we have stated, and which we believe to be erroneous.

Observations on Hospital Gangrene, with Reference chiefly to the Disease as it appeared in the British Army during the late War in the Peninsula, &c. &c. By JOHN BOGGIE, M. D., Surgeon to Her Majesty's Forces. 8vo. pp. 151. Edinburgh, 1848.

THE author of this book has mistaken both his vocation and his time. There are some excellent persons in the world, endowed by nature with capacities for anything but writing. Among such stands Dr. Boggie, whose English orthography must sorely vex the shade of Cobbett, if that worthy personage be still cognisant of nominative cases.

Still more lamentably has he mistaken his time. We are told that the Essay before us is a reprint of one read by the author before the Medico-Chirurgical Society of Edinburgh, in 1826, and published subsequently in their Transactions. Various grounds are adduced for its republication in a separate form. We shall only adduce what is obviously the main one, namely, to show more distinctly than formerly the claim advanced of having *introduced* the antiphlogistic mode of treatment in hospital gangrene. Now, granting to Dr. Boggie that, before his appointment in chief to the Cordillera hospital at Bilboa, surgeons *always* stimulated, and *never* bled in that disease, a letter to some of the weekly periodicals might have fully satisfied him, and re-established his claims, if necessary. He surely cannot complain of having been neglected in the works of contemporaneous writers; we will instance two only, because they are in the hands of every well-educated surgeon,—Cooper's Surgical Dictionary and South's translation of Chelius. The former learned compiler has repeatedly quoted the original essay in the Edinburgh Medico-Chirurgical Transactions, and has inserted in his article on hospital gangrene every single fact of importance contained in that essay; while Mr. South has placed it among the few bibliographical references bearing on that subject. As to the doctrine of the propriety of the antiphlogistic treatment in hospital gangrene in *some* cases, the surgical world were pretty well agreed, even before 1828, the date of our author's first *published* observations. Our best works on military surgery, before that period, gave us very full information on this point.

On the important and oft-mooted points, as to the local or constitutional nature of the disease, and its exact mode of propagation, nothing is added, and a great deal omitted. We believe Dr. Boggie has served his country well, but in bringing before the world this book, we repeat, he has mistaken *his time*. True, Galileo did the same,—but it was in the *opposite direction*.

PART III.

REPORTS, RETROSPECTS, AND SCIENTIFIC INTELLIGENCE.

PROCEEDINGS OF THE PATHOLOGICAL SOCIETY OF DUBLIN.

GENITO-URINARY SYSTEM.

1. *Extra-Renal Tumour*.—Dr. Hutton presented a specimen of a remarkable renal tumour. The subject of this disease, a boy five years of age, was admitted into the Richmond Hospital on the 20th March, with symptoms of vesical calculus. About two years and a half ago the child had been affected with caries of the dorsal vertebræ, attended with a chronic abscess in this region, but with little displacement of the vertebræ. The abscess opened, and continued to discharge for some time; the patient had anasarca, and his constitution was much impaired. Under Dr. Kirkpatrick's care he improved considerably, and was sent to the country.

About a year since the child began to complain of pain in passing urine, stillicidium, and other symptoms of stone in the bladder. On his admission into hospital he appeared much exhausted; his complexion was livid, and he had an expression of languor and anxiety, but he lay in a passive state, making no exclamations of pain. The pulse was weak, small, and frequent; respiration hurried; and he vomited everything he drank. The urine flowed constantly, and the prepuce was elongated and excoriated. The abdomen was swollen, particularly at its left side; and in the left lumbar region there was a remarkable prominence. The integuments here were, to a small extent, of a dull red colour; and a sense of fluctuation was felt between the last rib and the crest of the ileum posteriorly. As it was thought possible that the vomiting and general distress might depend on the confinement of purulent matter in this situation, a grooved needle was introduced on the 23rd, three days after his admission, and a fluid escaped which had the appearance and smell of turbid urine: its specific gravity was 1012. The opening was then enlarged with a bistoury, and about two or three ounces of very fetid urine were received into a vessel; some more continued to flow through the opening. The tumour did not appear to be very sen-

sibly reduced, but it felt softer and less tense. No relief ensued, nor was there any marked aggravation of symptoms. The vomiting continued, and the child died on the fifth day after his admission into hospital, having sunk gradually; he did not complain of any increase of pain.

Post Mortem Examination.—On opening the abdomen the omentum was found adherent to the parietal peritonæum along the left side; it adhered also to the descending colon, which was covered with lymph, and connected by its posterior surface to an oblong tumour extending vertically from the diaphragm to within an inch of Poupart's ligament, and transversely from the spine to the left side of the abdominal cavity. The tumour was of a dark slate colour, and contained fluid like that discharged from the opening made during life. The peritonæum presented the usual signs of inflammation, but in a slight degree, except in the vicinity of the bladder and of the tumour, where the parts were agglutinated by a larger quantity of lymph. The mesenteric glands were generally enlarged.

The mucous membrane of the urethra and bladder was very vascular. The latter was contracted, and contained a very rough calculus of oxalate of lime, about the size of a nutmeg. The right kidney and ureter presented nothing abnormal. On laying open the left ureter, which was not dilated, an oval ulcerated opening, half an inch in length, was discovered at about the middle part of its length. A probe introduced into this passed into a sac which surrounded the kidney, and was formed by the proper capsule of the organ, detached from its cortical structure, but connected with its pelvis at the concave border of the gland. The kidney was rather diminished in size, and its convex border presented two fistulous openings, one at its middle, and the other at its inferior part. A probe introduced into these openings entered readily into the pelvis of the kidney and ureter. On dividing the substance of the kidney the fistulæ were found to have resulted from two small distinct abscesses. On examining the chest the lungs were found extensively adherent to the parietes, and also to the pericardium, which they completely concealed. The pericardium was everywhere adherent to the surface of the heart.

Remarks.—It seems probable that the continued irritation of the bladder induced the morbid action in the kidney, from which the abscesses and renal fistulæ resulted. The urine escaping through the fistulæ seems to have detached the proper capsule of the gland, and to have dilated it to the extent described. The communication between this sac and the ureter at its middle part was probably a subsequent occurrence.

Rayer, in his work on diseases of the kidney, has described and illustrated three cases of renal fistulæ, two of the left and one of the right kidney. Of the former, the fistula in one instance passed through the diaphragm, and communicated with a bronchial tube; in the other the fistula opened into the descending colon. The renal fistula of the right kidney communicated with the duodenum. In these cases, however, the ureters had been obstructed, and the

urinary sacs were formed by the excessive dilatation of the pelvis and calyces of the kidneys. Mr. Stanley has published a case in the twenty-seventh volume of the Medico-Chirurgical Transactions, in which a very large urinary sac was formed in the cellular tissue around the kidney, from the escape of urine through an opening in the pelvis of the gland, the result of injury. The case now adduced, however, differs in several respects both from M. Rayer's and Mr. Stanley's, but particularly in the mode of formation of the urinary sac.—*March 29, 1845.*

2. *Renal Calculus—Bright's Disease of the Kidney.*—Dr. Lees presented a specimen taken from the body of a man aged 48, who was admitted into the Meath Hospital in a state of extreme debility, and labouring under chronic bronchitis in a congestive form. His general appearance was cachectic; he vomited every morning, and had pain in the right lumbar region; his urine was abundant, pale, alkaline, albuminous, and of low specific gravity (1.007). He had formerly been a soldier, and, while on service in Africa twenty-four years ago, was attacked with fever, from which his recovery was very slow; ever since that time he suffered from some derangement of the urinary organs, in consequence of which he was at length discharged, as unfit for military duty. Having afterwards returned to Ireland, his health improved, and has been generally good, with the exception of a few days' illness six years ago, when he passed a small calculus from the urethra; but he had an habitual cough during the last few winters. About three months before his admission the cough became much more severe, and he was attacked also by violent pains, with swelling of both feet. When he was admitted, there was no longer any swelling of the feet, but he complained of a sensation of burning pain in the soles, which was more severe at night. Dr. Lees formed the diagnosis of renal calculus, probably phosphatic, and combined with degeneration of the kidney itself. After he had been a few days in the hospital, he was attacked with erysipelas of the head and face, which extended to the fauces; he passed into a semicomatose state, and died.

Autopsy.—The diagnosis which had been formed of the existence of renal calculus was verified by the examination of the right kidney, in the pelvis of which there was found impacted the small calculus now produced. There was some slight inflammation of the mucous membrane in contact with the calculus, and the substance of the kidney adjoining it was more vascular than the rest, which exhibited the usual appearances of Bright's disease. The calculus itself is very brittle, and consists of the triple phosphate, not a common variety of renal calculus.

Dr. Lees directed attention to the several points of interest in this case: the irritability of the stomach, which is so characteristic of renal disease, and the coexistence of a renal calculus of the triple phosphate along with Bright's disease.

In connexion with the preceding case, Dr. Lees reminded the Society of a specimen of renal calculus which he had brought

under their notice during the last Session, but which had not then been analysed. [*Vide* Proceedings of 1st February, 1845.] He had now to produce a section of it; the weight, when entire, was four ounces, and it has been found to consist chiefly of the triple phosphate, with an excess of phosphate of lime.—*April* 11, 1846.

3. *Enlarged Prostate Gland.*—Dr. Mayne presented a recent specimen of diseased prostate gland, taken from the body of a man aged 72, who lately died of dysentery in the Hospital of the South Union. The prostatic disease, under which he had laboured for a considerable period, was attended by the ordinary symptoms, but towards the close of the case it was marked by the occurrence of some uncommon circumstances, which induced Dr. Mayne to lay the specimen before the Society. This patient frequently suffered retention of urine, occurring at intervals of three or four weeks, easily relieved by the catheter, and again brought on by exposure to cold, by any irregularity of habits, and very often by permitting the bladder to become too much distended; he was in the habit of occasionally absenting himself from the workhouse on leave, and was always observed to return suffering from retention. In June last he had gone out, as previously, on leave; he was absent much longer than usual, but when he returned he was not suffering from retention. This excited some curiosity, and being questioned, he acknowledged that, immediately after he had gone out, he was attacked by the complaint, and, not wishing to return so soon, he had applied to a medical practitioner, who proceeded to relieve him by introducing a catheter. This he described to have been effected with great difficulty; that blood flowed away before the urine began to be discharged, and that he was directed to retain the instrument in the bladder for some days. The result was that from that period to his death, an interval of about seven months, he had no return of the complaint. So pleased was he with this, that he used to contrast very unfavourably the medical practice of the hospital with that of the surgeon, by whom he said he had been perfectly cured at once.

Upon examination after death the prostate was found enlarged in all its lobes; the third lobe projected from behind forwards, and a false passage had been effected through it, which had become established as a new portion of the canal for the passage of the urine, which had continued to be discharged by it.

Dr. Mayne observed that Sir B. Brodie had advised the use of force in passing the instrument in cases of this kind. He says, “When your efforts to introduce the catheter have been unavailing, when you feel the point pressing against the tumour of the prostate, and unable to pass over it, apply some force to the instrument at the same time that you depress the handle. It will generally penetrate through the prostate, enter the bladder by an artificial opening, and relieve the patient, and, of course, continue to relieve him, if you allow it to remain in the bladder.”

Dr. Mayne observed, that the result of the case he had laid before the Society, whether the practice was designed or accidental,

confirmed (as far as one case could) the propriety of the advice given by Sir B. Brodie.—*January 23, 1847.*

4. *Encephaloid Disease of the Kidney.*—Dr. Lees exhibited a specimen of encephaloid disease of the kidney. The patient who had been the subject of the disease was a man named Robert Dinning, aged 60, a game-keeper, in the employment of the Duke of Leinster. He had been admitted into the Meath Hospital last summer, under the care of Mr. Smyly, to whom he (Dr. Lees) was indebted for the opportunity of laying the preparation before the Society. It was worthy of remark, that he was not admitted into the hospital for renal disease, but for hydrocele. When Mr. Smyly examined him, he detected a tumour in the right lumbar region, of the origin of which the man could not give any satisfactory account; indeed he seemed quite unconcerned about it, and merely requested to be relieved from the hydrocele. The tumour was of small size, situated in the right lumbar region, having a soft, fluctuating feel; it was free from pain, and there was neither œdema nor enlargement of the veins over its surface. The patient stated that he observed this tumour only a month previously; that he had suffered occasionally from pain in the back, which he attributed to rheumatism, and that for some time back he had occasionally passed gravel and blood with the urine, which, upon examination, was found to possess a specific gravity of 1007, and to contain the phosphates in considerable quantity.

Dr. Lees thought this case of much interest, as bearing upon the diagnosis of renal disease. It was obvious that the tumour might have been connected, either with the liver or the kidney; but the absence of any gastric affection, the freedom from pain or tenderness in the region of the liver, and, above all, the state of the urine, induced both Mr. Smyly and himself to come to the conclusion, that the case was not one of disease of the liver. But the question still remained to be determined, if it was an affection of the kidney, what was the nature of the disease? Was it an example of great distension of the kidney from obstruction to the flow of the urine, owing to the presence of a calculus, or was it malignant disease? This was a question more difficult to be determined, and to these two points their attention was particularly directed. In favour of the idea that the tumour was consequent upon the presence of a calculus might be quoted the presence of a soft tumour in the region of the kidney, accompanied by so evident a feeling of fluctuation that they were almost tempted to puncture it, and the circumstance that the patient had suffered for two years from the occasional passage of blood and gravel with the urine. But, upon the other hand, he had never had any of the rational symptoms of calculus, namely, sickness of stomach, vomiting, pain along the ureter, or retraction of the testicle. Both Mr. Smyly and Dr. Lees consequently made the diagnosis, that the case was one of malignant disease of the kidney, and the result of the *post mortem* examination proved that they were correct.

Autopsy.—When the cavity of the abdomen was laid open, the right kidney was found enlarged to an enormous size; it weighed four pounds and a half. The natural structure of the organ had totally disappeared, and one immense mass of encephaloid disease was enclosed within the renal capsule. The ureter, the caliber of which was nearly as large as that of the abdominal aorta, was also filled with cerebriform matter. The other viscera of the abdomen were healthy, but a small encephaloid tumour existed in the bladder; it was not ulcerated, and was so situated as not to interfere with the passage of the urine. The friends of the deceased would not permit the chest to be examined. Dr. Lees remarked that the preceding case presented one or two interesting features. In the first place, it involved a nice point of diagnosis, to which he had already called the attention of the Society; and secondly, it gave some idea of the enormous amount of change of structure which the kidney might undergo without the patient experiencing much uneasiness: in fact this man entered the hospital in order to obtain relief from another complaint, and treated the tumour quite as a secondary consideration, stating that he was only aware of its existence for a month before the period of his admission. Again, the age of the patient was a circumstance worthy of being remembered, because encephaloid disease was more usually found in the young than in the old. Dr. Lees also exhibited a coloured cast which accurately represented the appearances of the tumour in the recent state.—*January 7, 1848.*

RESPIRATORY SYSTEM.

1. *Perforation of the Lung and Pulmonary Pleura.*—Dr. Corrigan detailed to the Society the particulars of a case of perforation of the lung and pulmonary pleura.

John Burke, aged 23, was admitted to the Whitworth Hospital on the 20th instant. For the last twelve months he had been subject to cough with some difficulty of breathing, but was not obliged to discontinue his occupation, as a servant, until about a month previous to his admission, at which time the cough became more troublesome, and the breathing more oppressed, and for these symptoms he sought admission.

Slight dulness, together with mucous râle, was detected under the right clavicle, signs which were sufficiently explained by the subsequent discovery of red solidification and some tubercular deposition in the apex of the right lung. In the left lung the signs of phthisis were also evident.

On the 25th, while the patient was sitting on the night-chair, dyspnœa became instantaneously intensely urgent, the countenance indicated great obstruction to respiration, the skin grew cold, and he panted laboriously for breath. On removing him to bed and examining the chest the whole of its left side sounded clear on percussion, and the heart was felt pulsating strongly at the right side between the fifth and sixth ribs. Succussion indicated the presence

of fluid and air in the left side, but no *bourdonnement amphorique* or metallic resonance was perceptible when he spoke, nor ringing sound when he coughed. Thus there was well-marked evidence of a large quantity of air and of some fluid in the chest, but the signs which indicate a free transit of air, or *permanently* open canal, between the large bronchial tubes and the cavity of the pleura, were absent, viz., *bourdonnement amphorique*, which is produced by the free blowing backward and forward of air through the fistulous opening, and metallic resonance of voice and cough depending on the same. The man died in the evening of this day, and, on making examination, the left side of the chest, when opened into, gave exit to a gush of air, and the heart was found in the position at which it had been felt to pulsate during life. The right lung did not present much appearance of disease, but had at its upper portion tubercular depositions in two or three places. At the posterior and lower part of the upper lobe of the left lung a small, nearly circular opening of about three lines in diameter was found, surrounding which was a deposition of recent false membrane. The circular orifice in the pleura communicated with a tubercular cavity of the size of a pigeon's egg, the wall of which next the cavity of the pleura was soft, flexible, and thin, and capable of lying down on the opposite wall and closing the orifice of the bronchial tube opening into it, just as the pliable valve of an air-pump would lie down upon and close the opening covered by it.

The points to which Dr. Corrigan wished to direct attention were these—the cause of death and the power of affording relief in such cases as the present. Dr. Corrigan's view of the case was, that on the rupture of the pleura taking place, a rush of air into the cavity of the pleura at once occurred; that by each successive effort of the patient to inspire and relieve himself fresh additions were, for some time, made to the quantity of air admitted, until the cavity of the pleura was filled and distended; that, from the flap-like covering of the tubercular cavity, none could get back again into the bronchial tubes; and that thus this confined and condensed air became a distending power suddenly forcing the heart over to the right side, and compressing the right lung, and thus producing suffocation. Dr. Corrigan was of opinion that such a case can be diagnosed by the concurrence of the signs which indicate pneumothorax, as in this case, viz., sudden dyspnœa, tympanitic sound on percussion, immediate displacement of the heart to the right side (when the attack is on the left), and succussion, with the absence, at the same time, of the signs which are owing to the free passage of air through the fistulous communications, viz., *bourdonnement amphorique*, and metallic resonance of cough and voice; and hence, in such a case again occurring, Dr. Corrigan would recommend the passing of a small trocar through one of the intercostal spaces, to give exit to the compressing air, which the flap-like covering of the tubercular cavity prevents from escaping. It would not, of course, cure the disease, but it would prolong life and diminish suffering; and many have

lived with pneumothorax for a great number of years.—*February 10, 1846.*

2. *Pleurisy with Effusion.*—Dr. Law exhibited a drawing of the appearances in a case of pleurisy with effusion, complicated with tubercles in the substance of the lung and in the false membrane.

Mary Fitzgerald, the subject of this disease, was aged 47. She came under Dr. Law's care on the 18th of September, and died on the 14th of October. She was a laundress, and had, during the three months previous to admission, been much exposed to alternations of heat and cold. When Dr. Law saw her she had dyspnœa, cough, anasarca, and ascites. When in the sitting posture, her chest sounded dull on both sides posteriorly, but especially on the left; no vocal vibration could be detected on the left side, but it was, to a certain extent, perceptible on the right. Nothing abnormal could be detected anteriorly. When placed upon her hands and knees, with the view of ascertaining how far the dulness on percussion and absence of respiration posteriorly depended upon solidification of the lungs, or on fluid in the cavities of the pleuræ, the change of position had no effect on the signs on the right side, but on the left the sound became less dull, and a distinct, although feeble, respiratory murmur could be detected.

She was placed under the influence of diuretics, and improved for a time, but this improvement did not continue; the dyspnœa again became urgent; she was obliged to lie with her shoulders more raised, and at this time a distinct frotement murmur could be heard in the præcordial region, but from its being modified by respiration it was considered pleural. This frotement entirely disappeared after a few days. The character of her symptoms, which bore the stamp of great prostration and depression, created in Dr. Law's mind the suspicion that, besides pleurisy with effusion, some malignant action was going on, probably in the lungs, although there was no enlargement of the cervical glands, nor congestion of the superficial veins in the sides of the chest, to countenance such suspicion. No febrile excitement accompanied this exacerbation. In the midst of the dull sound on percussion, which had increased much on the left side, and was now as remarkable anteriorly as posteriorly, there was distinct respiration heard below the mamma, while the heart also pulsated in its normal position, and with a distinctness that rendered it evident that the anterior dulness was not owing to effusion into the pericardium. On examination of the body, a copious serous effusion was found in the abdomen, and in the cavity of the left pleuræ. The right pleuræ costalis and pulmonalis adhered through the medium of soft lymph, which also dipped down into the sulci between the lobes. The left lung occupied but a small space in the side, being much diminished in size. Adhesions connected it with the diaphragm, and also with the side of the pericardium. The whole of this lung was coated with false membrane, which, both here and in the right side, was deeply tinged with blood. This membrane contained in its substance numerous small tubercles, which also

were found in the apex of the right lung, and which were, to use the expression of Dr. Williams, plump, in contradistinction to the shrivelled state in which they are sometimes found. Dr. Law considered the deposition of the tubercle in the false membrane, taken in connexion with the blood effused into it (similar to the mode in which this fluid is free in the substance of some inferior animals, without being contained in vessels), to be proof of the inferior type of the inflammation. Not that he did not think that blood might be effused into false membrane, even in the healthiest constitutions, for experience had established the fact that these false membranes were susceptible of all the pathological conditions of original structures, and of hæmorrhage among this number. But as the formation of tubercle is out of the course of normal healthy inflammatory action, whose tendency is reparative, and which, although it may not, in the act of reparation, make the injured part as perfect and complete as before, yet it at least comes near it, so that the original structure is replaced by one next to it in the scale of organization. But as the formation of tubercle is, as Dr. Law observed, a complete deviation from this reparative action, having no tendency to assimilate in any respect to a normal structure, the co-existence of the tubercle with effused blood in the false membrane, in the same way as in the inferior animals, would argue an action such as we are not left to conjecture would take place in an inferior animal, but which experience proves actually does take place.

In the disease that recently affected cattle in this country, the hepatization of the lung, with tubercle in the hepatized structure, had been observed, and, from the short time that there was any appearance of disease in the animal, it could not but be believed that it was one and the same inflammation that produced both the hepatization and tubercle. So also Dr. Law had seen peritonitis in the cat, and in the recent lymph had found tubercle, so as to be satisfied that both must have resulted from the same inflammation. The difference, then, which appeared to him to exist between inflammation in a healthy and an unhealthy subject, was, that while lymph is deposited in both, it is endued with different susceptibilities,—the one ranging itself under the standard of normal structure, and when subsequently inflamed, comporting itself exactly in the same way as original structure; the other, on the contrary, when inflamed, producing a heterologous growth, without any tendency to assimilate to its parent structure. The further difference that Dr. Law would establish between inflammation in an unhealthy subject, occupying a higher position in the animal scale, and an inferior one, is this, that while there is in both a tendency to deviate from normal nutrition, in the inferior animal it exhibits such tendency more speedily than in the superior, it being the result of a secondary inflammation in the latter, while in the former it is synchronous with the original inflammation. It would appear as if the superior animal required a certain duration of disease to deteriorate its constitution, and thus bring it down to the original state of the inferior animal.

Dr. Law remarked upon the physical signs exhibited during life, and confirmed by *post mortem* examination. The absence of vocal vibration, with the dull sound on percussion, and the faint and distant respiratory sound on the posterior left side, when the patient was examined in the sitting posture, rendered it doubtful whether these phenomena depended upon effusion into the side, or on solidification of the lung; for while the absence of vocal vibration (a sign whose value is very great in such cases) indicated effusion, the faint respiratory murmur favoured solidification of the lung; the dull sound being common to both. The manœuvre of examining the patient under a change of posture only partially succeeded in clearing away the doubt. For, although the sound became evidently clearer, and the respiratory murmur stronger, still both wanted much of their normal character; yet the change of posture producing any alteration in the phenomena proved that there was effusion. While examination of the body confirmed this, it also proved what prevented the lung applying itself to the side, in place of the partially displaced fluid, viz., its adhesion to the diaphragm.

Dr. Law considered then that the phenomena of this case furnished a complete refutation of Laennec's theory of egophony, viz., that it was the vibration communicated to the fluid interposed between the lung and the side of the chest; for the interposition of the fluid between the lung and the side in this instance was unquestionable, and still there was no egophony. The examination further explained the temporary frottement murmur that existed in the cardiac region, and its modification by respiration, by an adhesion of recent date between the external surface of the pericardium and the pleura, lining the internal surface of the left lung. This adhesion also accounted for the heart's not being displaced by the extensive effusion into the left pleural cavity.—*March 21, 1846.*

3. *Edema of the Glottis.*—Dr. M'Dowell presented a specimen of œdema of the glottis, taken from the body of a man aged 48, who was admitted into the Hardwicke Hospital labouring under pneumonia of the upper lobe of the left lung, extending from above downwards, and accompanied by considerable fever. The pneumonia yielded to appropriate treatment; then there appeared some fulness, attended with pain, below the angle of the jaw, on the left side of the neck. In this situation an abscess formed, which Dr. M'Dowell regarded as one of these critical abscesses so frequent in the fever then prevalent in Dublin. There were no very urgent symptoms, but after three or four days a blush of redness appeared over the tumour, which had considerably increased in size; there was now also difficulty of deglutition. The abscess was freely opened on the 18th of January, by an incision made through the cervical fascia; healthy pus was given exit to, and much relief was experienced. At six o'clock in the evening of the same day intense dyspnœa occurred; there was also great difficulty of swallowing. The clinical clerk, being called for, found the patient sitting up in bed, breathing convulsively, his face livid, a clammy sweat everywhere bedewing the surface, the extre-

mities cold, and the vital powers rapidly sinking. Dr. M'Dowell was immediately sent for, but before the messenger reached him the patient had expired, after one or two violent convulsions. On examining the body after death, the abscess in the neck was carefully explored. It was situated below the parotid gland, and a little behind the angle of the jaw on the left side. It extended deeply inwards towards the larynx, and the tissues between it and the exterior of the larynx were condensed. On cutting into the larynx the submucous tissue of the arytenoid region was found so infiltrated that the opening of the glottis was completely obstructed; the remainder of the larynx was healthy. The upper part of the left lung was still solidified. Dr. M'Dowell remarked that the interest of this case depended on the occurrence of œdema of the glottis produced by subfascial inflammation, but only coming on after the abscess was discharging freely, and at a time when all danger of such a complication might be supposed to be at an end.—*January 23, 1847.*

4. *Typhoid Pneumonia*.—Dr. Gordon said, the preparation he was about to exhibit derived its chief interest from being an example of the mode in which the present epidemic had in a great number of cases proved fatal. A young man, twenty-two years of age, was seized on December 7 with the usual symptoms which precede an attack of the influenza at present epidemic. He was able to continue working at his trade until the 11th, when he was admitted into the Hardwicke Hospital. He had then slight fever, with a sense of great weight at the epigastrium; slight frontal headach and coryza; pulse about 100.

These symptoms continued during Saturday and Sunday. On Monday a remarkable degree of restlessness was observable, and he had a frequent short cough, which came on in paroxysms, and again subsided: he complained of slight pain in his right side. On examining his chest, it was found to be perfectly resonant, both anteriorly and posteriorly; and the only abnormal sound was a slight sonorous râle, which was audible chiefly on the left side. About six hours after this examination was made, he was suddenly seized with weakness, and total prostration of all the vital powers, so as to require the free exhibition of stimuli during that evening.

On the following morning his features were sunk and collapsed; he had a sharp, harassing cough, with but little expectoration; his pulse was 120, small and weak; his skin hot; but his lips were blue, and his extremities becoming cold. On examining the chest, it was found that the upper third of the right side sounded dull on percussion, and that, corresponding to the extent of dulness, there was distinct bronchial respiration and bronchophony. The lower part of the right, and the entire of the left side were perfectly resonant; the respiratory murmur through the left side was natural, but through the lower part of the right side it was puerile.

December 15.—It was found that the dulness was extending downwards over the right side, and bronchial respiration and bron-

chophony were now audible over almost the entire of this side; the vesicular murmur being audible only in the most inferior part of the lung. He complained of a constant darting pain or stitch in this side, but there was no frottement to be heard. The respiratory murmur through the left side had become puerile, and the sound on percussion loud. The patient had made no attempt to rally from the state of collapse; he was even more sunk, and the act of sitting up in bed, that the chest might be examined posteriorly, nearly produced fainting. He died in the course of the following day, the physical signs not having undergone any change. The *post mortem* examination showed that the right lung was solid; with the exception of its most inferior portion, it was found to be in the state of red hepatization, the second stage of pneumonia of Laennec. It sank in water, yet, though apparently firm, it was very easily broken down. There were also found the anatomical characters of pleuritis. Soft, tenacious lymph was extensively effused over the pulmonary pleura.

Dr. Gordon looked upon this case as an example of typhoid pneumonia, which was at the time very prevalent in this city. He was informed of three similar cases which had occurred in private practice, and proved fatal within the short space of thirty-six hours. He had then under his care in hospital five cases of the disease, which were all marked by the suddenness of the attack, and the prostration of the system which immediately ensued.

Dr. Gordon said, that we were acquainted with two forms of typhoid pneumonia, which had been epidemic in this country. The first, of which the present case was an example, had been prevalent at different periods since the year 1833, and had been well described by Dr. Stokes, Dr. Hudson, and others. This was the form which was so likely to supervene on typhus fever, erysipelas, &c., &c. The second was first noticed in this city in the year 1841, and its anatomical characters had been brought under the consideration of the Society by Drs. Corrigan and Stokes.

Dr. Gordon remarked in conclusion, that the important features in the present case were:—

- 1st. The suddenness of the attack of pneumonia.
- 2nd. The complete and immediate prostration with which it was accompanied.
- 3rd. The rapidity with which bronchial respiration and bronchophony became audible without any previous crepitus, *i. e.* the rapidity with which the lung became solidified, without having passed through the usual premonitory stage of effusion into the air vesicles; for it is to be observed, that not merely was there no crepitus before bronchial respiration and bronchophony were audible at the apex of the lung, but that, in conjunction with the latter signs, there was puerile respiration, and no crepitus audible in the centre of the lung, to which portion the bronchial respiration and bronchophony had on the following day extended.
- 4th. It was remarkable that the signs of solidification should

commence in the apex of the lung, and from thence proceed downwards, contrary to what is observed in the ordinary forms of pneumonia, and inversely to what we meet in the typhoid form of bronchitis, where the lower portion of the lung is that principally affected. And lastly, the existence of the anatomical characters of pleuritis, though during life there were no physical signs by which it could have been indicated.—*December 11, 1847.*

5. *Cirrhosis of the Lung.*—Dr. Law laid before the Society a specimen of cirrhosis of the lung, the chief interest attending which disease, it had often been remarked, was derived from the remarkable resemblance which its physical signs, constitutional symptoms, and pathological appearances, bore to those of phthisis,—a resemblance so strongly marked in this case, that he was induced to bring it forward. The subject from which the specimen was taken was a young girl, sixteen years of age, who had been under his observation at various periods for attacks of hæmoptysis, during the last three years. On the first occasion he saw her, she exhibited in a remarkable manner most of the physical characters of phthisis. There was well-marked dulness on percussion at the left side of the chest, an extraordinary amount of pectoriloquy, and resonance of the voice, more especially posteriorly between the scapula and the spine. A closer examination, however, led him to form the diagnosis that it was a case of cirrhosis of the lung, a conclusion he was induced to come to from the great resonance of the voice, the displacement of the heart, which pulsated under the left clavicle, and from the unusual resonance at the right side on percussion, and the absence of the constitutional symptoms of phthisis. It was, in fact, the symptom of hæmoptysis chiefly which led to a suspicion of consumption. The patient was a girl of twelve or thirteen years of age when she first came under his notice; and her friends informed him that, having seen a cart pass over a child, she was seized with sudden palpitation of the heart, from which she had ever since suffered. She came under his observation on several occasions during the last three years, for attacks of bronchitis and pneumonia affecting the right lung, and it was for one of these attacks that she was brought for the last time into the hospital. Her symptoms during this last illness were extreme dyspnœa, with an almost universal crepitus throughout the right lung. The entire surface of the body was of a dark livid and congested hue. He had an opportunity of exhibiting this case to many medical men, all of whom remarked the striking resemblance which the physical signs bore to those of phthisis.

Autopsy.—Upon laying open the cavity of the thorax, the lung of the affected side was found reduced to the condition of a mere rudimentary lung, and formed a small mass of tough fibro-cellular structure, displaying, when cut into, the mouths of the dilated bronchial tubes, but no trace remained of its vesicular structure. The heart was found situated immediately under the left clavicle; the dia-

phragm was drawn upwards to a considerable distance, allowing the stomach, which was situated above the fourth intercostal space, to emit a clear sound, when percussion was performed beneath the mamma. The margin of the right lung projected into the left side of the chest, and on examining this lung it was found in a highly congested state, with a few tubercles scattered through it. The left lung presented no trace of tubercular disease.

Dr. Law observed, that he always thought that the various hemorrhages which from time to time occurred in such cases were supplied from the lung least affected, an opinion which was confirmed by an examination of the pulmonary artery in this instance; for upon following the course of this vessel it was found that the blood met with no interruption at the right or sound side, in its passage from the right ventricle into the lung; whereas, at the left or affected side, the arterial branch seemed suddenly to terminate, and be no longer capable of permitting the entrance of the circulating fluid. This lesion was particularly interesting from the peculiar changes which took place in the lung affected, leading to a great diminution of its bulk, and consequent displacement of other organs, to fill up the space left by the contracted organ. The fibro-cellular structure observed in the left lung was first noticed by Laennec, who regarded it as composed of dilated bronchial tubes; but it was subsequently examined by Dr. Corrigan, who discovered the true nature of the structure, namely, that it was made up, not of dilated bronchial tubes, but of lymph endued with contractile properties, which, deposited in the structure of the lung, and in other organs, invariably produced contraction of the tissue, and modification of the form of every organ in which it existed.—*February 12, 1848.*

6. *Circumscribed Pleuritis.*—Dr. Lees said that the lungs which he then exhibited were taken from the body of a young girl eighteen years of age, who was admitted into the Meath Hospital under his care on the 31st January, suffering from an acute affection of the chest. She was labouring under fever, difficulty of breathing, and cough. There was dulness on percussion from the spine of the scapula down to the base of the left lung, and extending to some distance laterally. When the chest was examined with the stethoscope, intense bronchial respiration was heard posteriorly, from the spine of the scapula, down to the base of the lung on the left side. At the same time there was well-marked bronchophony, and a crepitus which was but feebly heard. The intercostal muscles appeared to act well; no displacement of the heart could be detected, nor, on making the patient lie on her face, did the change of position produce any sensible diminution of the dulness. So far all the signs indicated the existence of pneumonia. On the other hand, the history of the case, from which it appeared that the girl had been seized on the previous Saturday with severe pain in the side, preceded by rigors and relieved by bleeding; the total absence of vibration when the hand was placed over the dull portion of the chest; and the presence of a harsh, dry cough, without expectoration;—all these circumstances pointed out

the existence of pleuritis. The diagnosis of these two affections was accordingly made. It was unnecessary to dwell at length on the treatment; he endeavoured to bring her under the influence of mercury, but the patient rapidly sank, and died on the 8th.

Autopsy.—On opening the thorax the lungs were observed not to collapse, and on attempting to remove them from the body it was found necessary to detach the parietal layer of the pleura on the left side, in consequence of the effusion which existed; in doing so, the sac became ruptured, and exit was given to about two pints of fluid, which presented the appearance of oatmeal water. The lungs, with the pleural sac and corresponding portions of the diaphragm, were now removed from the body. On collapse of the sac, the left lung was found reduced to about one-third of its ordinary dimensions, and lay compressed against the spine. The costal and pulmonary pleuræ were adherent, as far as the external margin of the compressed lung, but external to this they formed a sac of considerable dimensions and of a conical form, reaching superiorly almost to the level of the apex of the lung, and extending downwards to the diaphragm; its internal surface was thickly coated with false membrane presenting a reticular appearance, particularly on its diaphragmatic portion.

To ascertain the state of the lung, a section was now made through its substance anteriorly, about its centre; in doing so, a cavity of considerable dimensions was laid open, and exit given to about two or three ounces of purulent fluid; on clearing out this cavity, it was observed to be lined with a false membrane, and being bounded on all sides by the pulmonary structure, presented some resemblance to a pneumonic cavity; further examination, however, proved it to be an interlobular circumscribed pleuritis. Fluid was found to pass from this cavity into the general sac; but from the great difference of the contents of each it is highly probable that this communication was owing to want of proper delicacy in examining the parts: another small circumscribed pleural sac was discovered posteriorly, close to the spine. The summit of each lung was occupied by tubercular deposits, and some calcareous concretions; one of the bronchial glands also was filled with calcareous matter. The right lung was in a state of general engorgement, and some spots of ulceration were detected in the cæcum.—*February 12, 1848.*

7. *Empyema; Phthisis.*—Mr. Adams detailed the following case, and exhibited the morbid specimen. Thomas Snell, aged 21, of a strumous aspect, was admitted into the Richmond Hospital on the 1st of July, 1847; he stated that several members of his family had died of consumption; he complained of some difficulty of breathing, much increased on making any exertion, and of palpitation of the heart. When his chest was exposed, the heart was seen to pulsate on the right side of the sternum; the right side of the thorax was naturally raised and depressed during respiration, while the left side was motionless, and the intercostal spaces seemed as if protruded from within. The measure of the left side of the thorax exceeded that

of the right by one inch and a half. On placing a hand flat on each side of the thorax, and desiring the patient to reply to several questions, his voice was felt to cause the right side of the thorax to *vibrate strongly*, while no *vibration* whatever was communicated to the left side.

The right side of the thorax sounded well on percussion, except beneath the right clavicle, where some little dulness was appreciable. The left side was universally dull. This dulness even transgressed the median line of the sternum, and bronchial respiration was audible when the ear was applied to the posterior part of the left side, while in most of the right lung the respiration was puerile. His pulse was 92; respiration 28 in the minute; his tongue furred. He stated that he could lie better on his left side than in any other position; that his cough was occasionally troublesome, but without expectoration. The previous history of his case, as told by himself, was, that he had got a severe cold which confined him to his bed for three weeks, and that since this attack he had never been free in his breathing, or without cough.

The diagnosis was, that the man had now extensive effusion of fluid, which was probably of a purulent nature, into the left side of the thorax, which had displaced the heart; but that, at the same time, there were strong reasons to apprehend, from his general aspect and many of his symptoms, particularly the dulness on percussion under the right clavicle, that tubercular consumption had set in in the right lung.

Treatment.—As the symptoms belonging to the effusion at the left side were by no means urgent, we did not think it prudent, under such unpromising circumstances, to resort to any surgical operation for the evacuation of the fluid from the sac of the pleura, more particularly as the right lung could not now be benefited by any such operation, and, besides, the patient had not been yet subjected to medical treatment for the effusion. He remained under observation in the Richmond Hospital for fifteen days, during which time blisters were applied, and the surfaces which had been vesicated were dressed with mercurial ointment. Active diuretic medicine, combined with five-grain doses of the hydriodate of potass, three times a day, were also directed.

On the 16th of July he left the hospital for the country, somewhat improved in health.

In about ten weeks after this he returned to the hospital, viz., the 30th of September. He stated that he had continued to improve in the country until lately, when he complained of troublesome cough, and was always either affected by sweating or diarrhoea; his pulse was remarkably small, weak, and 108 in the minute. He now laboured under well-marked hectic fever, the cause of which we concluded to be the progress of tubercular consumption in the right lung. The effusion into the left side of the thorax now gave us no anxiety. The heart, although still beating much to the right of its normal position, had returned somewhat towards the left; the

measurement of both sides of the thorax was now equal. There was no longer protrusion between the ribs; however, there was still the same dulness on percussion, and other evidence of fluid in the left pleura, as before, although, from the partial return of the heart towards its place, the flattening of the intercostal spaces, and the diminution in capacity of the left side of the thorax, it was evident that it had much diminished in quantity, and was in progress of being absorbed.

The treatment was now chiefly directed to the state of the *right* lung, and to the most troublesome symptoms under which he laboured, namely, the cough and diarrhœa. Having failed to relieve the symptoms, we advised him again to return to his native air. Before his leaving the hospital on the 20th of November it was ascertained by measurement that the left side of the chest was less, by half an inch, than the right. On examination by the stethoscope, placed underneath the right clavicle, a muco-crepitating râle was distinctly heard.

In two months more, that is, on the 22nd of February, he was for a third time re-admitted into the hospital. He now had all the appearance of a person in the last stage of phthisis; his pulse 120, and occasionally 140; much dyspnœa and cough, with purulent expectoration: he was always affected either by diarrhœa or by perspiration. During the patient's absence in the country the affection of the left pleura had undergone a remarkable change; he had noticed before he went home that the left side of the thorax had been undergoing the usual process of contraction, as the fluid was becoming absorbed. Yet, notwithstanding this solitary sign of improvement, while he was in the country an abscess pointed posteriorly on the left side of the thorax, which a surgeon opened, and through the opening the left cavity of the pleura was relieved of an enormous quantity of purulent matter. The effect of this, he said, was to render his breathing somewhat easier. A fistulous opening, which sometimes closed for a day or so and then re-opened, was observed posteriorly between the ninth and tenth ribs of the left side. The whole of this side was now clear on percussion, but no vibration of the voice nor respiratory murmur was heard.

As to the right lung, we were now prepared to expect phthisis here in an advanced stage, from the symptoms we knew he had two months before he left the hospital. That these fears were too truly realized will appear from the following note in the Case-Book, dated the 25th of February: "*There is gargouillement distinctly heard underneath the right clavicle; he has profuse diarrhœa, troublesome cough, with puriform expectoration.*" Another note, taken on the 7th of March, runs as follows: "The fistula which communicates with the sac of the left pleura has closed for the last two days, and now the lower part of this side of the chest is dull on percussion; the dyspnœa is increased; the diarrhœa has not been checked; the pulse is very weak; the extremities cold: the patient believes himself dying." On the 8th a quantity of purulent matter again made its way out

of the external opening ; he thought that this evacuation relieved his oppression, but he gradually became exhausted by hectic fever, with a diarrhœa which nothing could control. He died on the 21st of March.

Autopsy.—The heart did not incline at all to the left side of the thorax, but seemed placed nearly vertically in the middle line ; the left pleura contained nothing but air and a little purulent fluid, which gravitated posteriorly ; when this was removed, a small, round, ulcerated opening, a few lines in diameter, with some lymph around it, marked the orifice through which the fluid of the empyema had escaped : this opening was placed posteriorly near the angle of the rib on the left side, at the ninth intercostal space. The pleura seemed universally whitish and opaque, but no flakes of lymph were observed coating it. Placed along the side of the posterior mediastinum, and compressed towards the spine into an incredibly small space, lay the left and nearly obliterated lung ; it was at first concealed from view by the opaque pleura, which bound it down ; when this was dissected off, the lung appeared to be about five inches in its longitudinal axis, and one inch thick from before backwards ; its breadth did not exceed two inches. This diminished lung, in its colour and apparent structure, resembled much the lung of a full-formed fœtus ; it contained no air ; it sank in water ; it had somewhat the appearance of the organ in an early stage of red hepatization, but contained no serum, and was not in the least friable, as the hepatized lung is.

The right lung, at its apex, was hollowed out by numerous small tubercular excavations containing purulent matter, and was adherent hereabouts to the parietes of the thorax ; lower down there was tubercular infiltration ; and lower still, the lung was emphysematous.

The rectum and colon presented a remarkable granular appearance of the mucous membrane ; a few spots of ulceration were here and there visible.

The foregoing is the history of a case of chronic pleurisy of the left side of the chest with purulent effusion, complicated with tubercular disease of the right lung. On making the *post mortem* examination, we find that, although the lung was compressed by the effusion, and bound down to the spine by the thickened pleura, and from these causes had been rendered incapable of performing its functions, still that no trace of any tubercle whatever could be discovered in it ; while, on the contrary, the lung of the opposite side was universally affected by tubercle. Hence, it is reasonable to conclude that the attack of tubercular disease in the right lung was secondary to the invasion of the chronic pleurisy with effusion into the left pleura.

Although it does not follow, as a matter of course, that because the development of tubercle in the right lung so immediately followed on the pleurisy and effusion, which caused the obliteration of the left, that the latter effect became the source of a tubercular dis-

ease of the right, still it may be interesting to inquire what influence the pleuritis and its consequences had on the development of tubercular disease in the lung which had been affected by this disease. In my opinion, the depressing influences in the system produced by pleurisy, with empyema, were greatly calculated to expose a patient to the invasion of tubercular disease, more particularly when this patient confessedly had a constitutional predisposition to this affection. Let us also bear in mind that when one lung had been so completely annihilated, as to its functions, as it was in this case, that the other, of necessity, became called upon to perform a double duty. The result of such inordinate compensatory action must have been to excite disease in this lung. I may here remark, that this is the second case I have seen within these few months of fatal tubercular development in one lung, following on pleuritis with effusion into the sac of the opposite pleura. If, then, it be considered that the compression of the lung by the fluid effused into the inflamed pleura, and the mechanical binding down of the compressed lung by the thickened membrane, produce such evils on the opposite lung, it becomes necessary for us to inquire how could these effects be prevented or remedied. The suggestion immediately occurs, that the early evacuation of the effused fluid, by the operation of paracentesis of the thorax, might release the lung from pressure, and if the operation be performed before the pleura becomes much thickened, that there would be the less danger of obliteration of the subjacent lung being perfected. It is foreign to my object, and unsuited to this place, to pursue such an object as this just now; but whether these theories may be supposed to favour the early operation or not, the choice was not, in this case, left to us, whether we should practically adopt such views or not.

When the patient applied at the Richmond Hospital, he had a very cachectic aspect, and from the signs already mentioned we were satisfied that an effusion, to a large amount, existed in the left pleural sac; we considered the fluid was of a purulent nature, and under all the circumstances of the case, thought that its absorption was, to say the least of it, very problematical; on the other hand, we did not see any reason to urge us to have immediate recourse to active surgical interference with the case, because the dyspnoea was not by *any means distressing*; we thought also, that the effusion was so great, and had existed so long, that even if the fluid were removed, the compressed lung would not be able to resume its form and function, and under these circumstances the principal result of the operation would be merely the substitution of atmospheric air in the cavity of the pleura for the fluid removed. The cachectic aspect of the patient, his own history of the family predisposition to phthisis, and, above all, the dulness perceived on percussion on the infraclavicular region of the right side, betraying the existence of tubercles there,—all these rendered the prognosis most unfavourable, no matter what course was pursued, and prevailed with me in deciding against having immediate recourse, on his admission, to the operation

of paracentesis thoracis. The patient, therefore, was subjected to medical treatment, which appeared for a time to be followed by a good result; certain it is, that absorption had commenced, and in some degree had proceeded, as the gradual diminution of the capacity of the left side of the chest, and partial return to its place of the heart, proved. In a word, so far as the empyema was concerned, the case seemed to proceed favourably; but then the patient's health became deteriorated by the advance of tubercular disease in the right lung, and then the affection of the left side underwent a new change. The purulent fluid had itself made its way out of the cavity of the chest, and, elevating the skin, pointed posteriorly. The medical attendant opened the abscess, and through this opening a large quantity of purulent fluid, from the cavity of the pleura, escaped, and from day to day this side of the chest diminished in size, and a fistulous opening remained; but it does not appear that the patient was benefited by the occurrence, as colliquative symptoms soon set in, and these, with the advance of tubercular disease in the right lung, soon proved fatal.—*April 1, 1848.*

MEDICAL MISCELLANY.

Case of Hypertrophy with Abscess of the Pituitary Body. By T. P. HESLOP, M. D.

THE following brief account of this very uncommon lesion occurring in a body so little understood as the pituitary body, I think it useful to put upon record.

J. H., twenty-six years of age, an engineer, of active habits, and subject to exposure to bad weather, was attacked with most acute pain in the head on the 11th of February, 1848, after dancing almost all the night previously. Though up to this period robust, and in constant employment with the duties of his arduous profession, he had been very delicate in early youth, and inherited a very strong phthisical predisposition. Subsequently, it was remarked to me by a friend who had opportunities of seeing my patient daily, that for six or eight weeks before he had exhibited an extraordinary tendency to sleep. If he sat down, he would immediately fall into a heavy sleep, almost amounting to stupor; but the sudden super-vention of the acute pain referred to was the first symptom that attracted attention to his condition. After using some domestic remedies for a day or two, such as constantly bathing his forehead with cold diluted vinegar, from which he derived no benefit, he sought medical advice. He was then treated for "bilious headach," with some simple medicines, and in a few days the pain was very much relieved, and the slight concurrent feverish symptoms disappeared. Unfortunately, he now persisted in examining his busi-

ness papers, and committed some dietetic errors; these imprudences were followed by a return of the pain with renewed force. Now, too, he began to be excited, restless, and to talk wildly; or, on the other hand, he would lie in a state of semi-stupor, silent, and absolutely indifferent to everything around him. His pulse became quick, and he lost all appetite; still his attendant thought the case one of no great importance,—a kind of stomach derangement, and so on. In health he had a jocose, wayward, and half-mischievous way about him; and, it must be confessed, his wild talking appeared very easily to be only an exaggeration of his ordinary manner. In the midst of all this,—four or five mornings after the renewed attack,—he stripped himself perfectly naked, jumped out of bed, and passed a stool on the floor while standing before his attendant and the physician. This was a “glaring instance.” The joke-theory scarcely comprehended this. Consultations were held, mercury given vigorously, leeches and blisters applied. Nothing gave a decided check to the progress of disease, and he fell into a state of profound coma. The pulse became intermittent and very slow, some days even below 40 in the minute. It was now believed that he was in fever. Matters certainly came to a *crisis* on the evening of about the eleventh day after the supervention of distinct symptoms. His pulse became almost imperceptible,—extremities cold,—hands convulsively clenched,—jaws so firmly closed that, but for the cavity left by the loss of a tooth, nothing could have been poured down the throat. Wine was given freely, yet with caution; another blister was applied to the back of the neck, and from this day a gradual improvement took place, doubtless ascribable to the mercury which had commenced to affect the mouth, and the other judicious means which had been employed. My own personal knowledge of the case dates from this period. With careful support and stimulation he rapidly rallied, and, though occasionally retrograding and showing some of his former bad symptoms, twelve days afterwards he was so rational, and had so good an appetite, that I confidently predicted an early and complete recovery. Yet two symptoms remained which caused me some misgivings. One of these was an almost total loss of memory; a few minutes after taking a glass of wine he would utterly forget having had it. No evidence, no chain of facts could induce him to believe he was in Ireland and not in Sussex, where he had spent a few days two or three years before. The other ill-ominous symptom to which I refer was loss of power over the sphincters. Now and then he would give signs that he wished to pass a stool, but the rule was, that it was voided unconsciously and without warning; and when he occasionally did ask for the urinal, it was almost certain that he would pass water before the attendant could give the utensil to him, so sudden and urgent was the impulse to evacuate the contents of the bladder. However, he was deemed sufficiently well a fortnight afterwards to undertake a journey of sixty miles to Dublin; upon arriving in which city he was put under the care of Dr. Stokes. It would be wearisome to go into anything like a detailed description

of the many phases of a chronic and ever-varying disease; it may suffice to state, that he soon altogether lost control over the sphincters, that he progressively emaciated, and that his memory appeared to have almost vanished; still, when tolerably well, he retained a considerable amount of intelligence, and frequently answered questions quite coherently, though so unwilling to speak that whole days would pass without his saying more than "yes" or "no" occasionally. The idea irresistibly conveyed to the mind was, that had the single faculty of memory been perfect, the intellect would have been sound. With the exception already given, he had paralysis of only one muscle—the orbicularis of the right eye-lid, which for several months before his death he did not close, sleeping or waking. The acute pains in the head never forsook him. Sometimes several days passed over without these attacks, but they were rarely more than two days apart; these always came on suddenly, when the face instantly became of a scarlet hue. While strong enough he raised his hands to the head and gave a look, and uttered groans, too distinctly portraying the agony of the moment. The paroxysm rarely lasted more than ten or fifteen minutes, and was always succeeded by a profound stupor of some hours' duration. At various periods he suffered also from severe cramps of the lower extremities. Towards the end of August it became obvious that the strength was nearly exhausted; but he was destined to give another illustration of the law that chronic disease kills by giving the predisposition to an acute one. An obscure attack of pleurisy came on, of which he died on the 4th of September.

Autopsy, thirty Hours after Death.—The body was extremely emaciated; upon taking off the calvarium the membranes covering the hemispheres of the brain appeared quite healthy; we then proceeded to detach the brain from the base of the skull; when we arrived at the second pair of nerves, we found them almost surrounded by a softish, dark grey tumour, about the size of a large walnut, occupying the position of the pituitary body on the sella turcica, but extending much beyond the space usually held by that body both posteriorly and laterally; it was very carefully dissected from the dura mater and surrounding structures, but not without slightly lacerating it and giving exit to a small quantity of thick, dark red, purulent-looking fluid. Having taken the brain out of the skull, and turned its base upwards, we examined the exact relations of the tumour; in this position it filled the entire interpeduncular space, extending backwards to the pons varolii, forwards and laterally protruding into the commencement of the fissure of Sylvius; the crura cerebri were distinctly pressed *outwards*, so that the space just referred to was greater than natural; it could be easily raised from its position after dissecting off a few delicate cellular bands, having no other connexion with the brain than through the pituitary body, which seemed lost in the tumour: or rather this latter seemed a *cystiform enlargement* of that body containing the purulent-looking fluid I have already described. Underneath the tumour we

observed a small quantity of thin fluid, of a slightly reddish tinge, upon drawing off which we remarked that it was but the surface of a more deeply situated fluid, contained in the lateral ventricles. Twelve or fourteen drachms were measured, but probably an equal quantity lay on the base of the skull, of which no note was taken; in fact, the tumour occupied not merely the floor, but almost the entire cavity of the third ventricle; the anatomical relations of the former were precisely identical with those of the latter. The quadrigeminal bodies, we thought, seemed flattened in the antero-posterior direction by the pressure of the tumour.

When we add an increased firmness on section of the medulla oblongata, and slight opacity, with thickening of the arachnoid, over the middle lobes of the base of the brain, we have mentioned all the morbid appearances in the encephalon. But we must record the fact that the bones entering into the formation of the middle fossa of the base of the skull had, scattered over various parts of them, curious little stalactitic processes or exostoses, varying from one to three or four lines in length: the elevations, too, corresponding to the sulci of the middle lobes of the brain, were extremely sharp and angular. I shall not stop to inquire whether these had any, or what share in the production of the remarkable disease under which this gentleman suffered. No tubercle could be found in the lungs. There was a considerable amount of recent lymph over the base of the left lung and corresponding surface of the diaphragm.

Two Cases of Acute Glanders in Man. By HENRY GRAVES, M. B.,
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IN the long catalogue of suffering there is no disease more painfully or more hopelessly interesting to the physician than glanders, when it appears in the human subject. Since the year 1821, when the attention of the profession was first directed to these cases, so many reports have been published in various periodicals, both at home and abroad, fully corroborating the views advanced by Dr. Elliotson and others, as to the communicability of this disease to man, that at the present day no one has a reasonable doubt on the subject. We must, however, regret, that, though much has been written, as yet little advance has been made in the treatment of those miserable sufferers.

The two following cases are recorded in the hope that they may elicit further information. Possibly those who have not heretofore seen the disease may recognise it by their attention being again called to the peculiar appearance of the areola here noticed, confirming in every particular the accurate description given by Dr. Bigger(*a*), and by Dr. M'Donnell of the Richmond Hospital, in a case quoted by Dr. Graves(*b*). As I am of opinion that in glan-

(*a*) Dublin Med. Jour., First Series, vol. xv. p. 476.

(*b*) Clinical Medicine, second edition, vol. ii. p. 332.

ders human aid (as far as our present knowledge extends) is powerless, further than in some degree to alleviate suffering by the judicious employment of opiates, medical men are bound to give the earliest intimation to the relatives of the patient of his almost hopeless state. It is only in the commencement of the disease that the mental faculties are unimpaired; and, to lay aside all religious considerations, it may be necessary to arrange a thousand worldly affairs which must occupy more or less time: besides, the careless use of clothes, sponges, basins, &c., may cause the loss of more than one life. How valuable then is an early diagnosis!

CASE I.—Michael Magurk, aged 45, a strong, healthy man, of remarkable muscular development, was attacked on Tuesday, 11th April, with rigors, pain in the head, joints, and back, restlessness, and excessive thirst. I saw him on the 16th, his friends supposing he had fever, and found him in the following condition: expression of countenance heavy and stupid; eyes watery; conjunctiva somewhat suffused; skin hot and dry; tongue covered with a thick creamy fur; bowels confined; pulse 72, soft and regular; he complained of extreme thirst, and dryness of the fauces, pain in the back, shoulders, neck, and arms, particularly on the left side. I found that he had “a sore hand,” which did not seem to give him much annoyance; however, on examination, I was so much struck with the remarkable appearance presented by the ulcer and a *small pustule* on the hand and back of the wrist of the patient, that I at once, perhaps rather abruptly, asked, “had he been employed about sick horses?” and, being answered in the affirmative, without hesitation formed an unfavourable prognosis on the case. It is not easy to convey an accurate idea of the ulcer and pustule that so strikingly arrested my attention. The former was situated on the outer side of the left hand, about the middle of the metacarpal bone of the little finger, in size nearly as large as a half-crown piece, of a blackish purple in the centre, shading down at the edges to red, and beyond this there was a distinctly elevated ridge or *wheel* of white; the integument had given way, and from it exuded a thin, ichorous discharge; the latter was on the back of the wrist, not larger than a split-pea, with a yellow summit, surrounded by a red base, and, external to all, the *hard, elevated, white ring*, which may be looked upon as perfectly distinctive in glanders. At the bend of the elbow a small enlarged gland could be felt, and a second was perceptible in the axilla; these were but slightly painful to the touch, and I could not trace any hardened or enlarged lymphatics leading up the arm. On the previous Sunday he assisted in skinning a horse that died of glanders, having at the time a “hack on his hand.” I ordered a poultice to the sore; effervescing draughts *ad libitum*; and two aperient pills at bed time.

On the 18th he was extremely anxious about his illness, and expressed great fears as to the result; he complained of *intense thirst*, general lassitude; severe pain in the back; with frontal headache, and dryness of the nose; he was very restless during the night, and

raved a little; pulse 79; the tongue was heavily coated, and the bowels still rather confined. His hand had been constantly poulticed, and, he assured me, it was not at all painful, though, on examination, I found that some amount of sloughing had taken place in the centre of the ulcer: his hand and fore-arm were considerably swollen. Four pustules had come out on his chest, exactly similar to the one before described, each surrounded by the peculiar elevated, hardened, and white zone; the glands in the axilla and bend of the arm did not seem to be larger than on the 16th; he complained greatly of pain and heat in both his ankles, calves of his legs, and knees; each joint was somewhat swollen, and the integuments were rather redder than natural. Ordered to take a small quantity of stimulant (punch); an opiate at bed time.

As this man lived a considerable distance from my residence, I was unable to visit him till the 20th, when I found that a very marked change had taken place: his features were pinched and anxious; he lay bathed in perspiration; and, since the previous day, had suffered from profuse diarrhœa; upwards of twenty offensive, slimy stools had been passed within twenty-four hours; his tongue was covered with a yellow fur, the papillæ at the edges much elevated; pulse 120, weak; thirst unquenchable; pain in back and head (frontal) unabated; restlessness very great; he slept but little during the last two nights, and raved almost incessantly, though when spoken to he answered in a rational manner; the chest, arms, and legs, were covered with a crop of pustules in all stages,—some just formed, with a minute vesicle in the centre, apparently filled with serum, in others more advanced, the vesicle containing pus, while in a third set (few in number) the pus had become dry, the scale had fallen off, and a depression was left in its place, seemingly covered with a thin pedicle from which a watery fluid exuded; *all*, however, were surrounded by the characteristic circumferential *wheel*, more or less plainly marked, but the more advanced the pustule the less evident was this appearance; his joints were much swollen and exceedingly painful; the calves of his legs, quite black, seemed as if they had been severely bruised. Sloughing of the hand had proceeded to great extent; the metacarpal bones were visible at the bottom of the sore, from which the discharge was highly fetid, dark, grumous, and profuse; a number of soft, ash-coloured, gelatinous granulations were springing up from the bones; these broke down when touched by a probe. He had a slight cough, and complained of “a stuffing in his nose, and a bad smell;” there was slight discharge of thin purulent matter from the left nostril, and a trifling swelling and redness of the corresponding cheek. I ordered an astringent mixture; an opiate at bed-time; an effervescing draught; port wine and water during the day.

21st. All the symptoms aggravated; no sleep; delirium almost constant; diarrhœa unabated; tongue brown, dry, and tremulous; teeth covered with sordes; thirst most distressing; pulse 110, weak

and irregular; face red and much swollen; great discharge from both nostrils, and from the left eye, which was quite closed; his legs and arms were swollen and discoloured; effusion had taken place into all the larger joints. In a lucid moment, on being questioned, the unfortunate patient exclaimed: "Oh, give me sleep; I am pains all over; you could not lay a finger on a part that is not sore." The stench of the apartment was so great that I was glad to hurry away and breathe a pure atmosphere.

22nd. He died about six o'clock in the morning. I was informed that shortly after my visit he fell into a state of coma, and lay perfectly insensible till released from his sufferings, thirteen days after the introduction of the virus into the system, and eleven from the first appearance of the symptoms. No *post mortem* was permitted by the relatives.

CASE II.—Owen Conwell, aged 38, a strong labourer, assisted in skinning the same horse by which Magurk was infected, and, being a country farrier, examined the lungs and intestines of the animal. I could not learn that he had any cut or abrasion of the hands at the time, but a slight scratch would easily escape notice; and being brought much in contact with the diseased mass it is not difficult to trace the introduction of the virus into the system. On the night of Monday, 10th, he was attacked with rigors, pain in the back and head, and great thirst; he slept little, and was very restless. On the 16th I visited him; he was then complaining of great pain in the right arm and shoulder, which was much swollen and red, the redness disappearing under the pressure of the finger, and conveying to the touch a "boggy" feel. There were several pustules, exactly similar to those described in Magurk's case, on his chest and arms, and one on the right cheek; these, he said, he first noticed on the previous day. He suffered great pain in his shoulder and back, and indeed in nearly all his joints; his thirst was insatiable; tongue dry and furred; pulse 96; some tendency to diarrhoea, but this was supposed to arise from one or two doses of salts which he had taken at the commencement of his illness: he was extremely anxious about his condition, alarmed by the reports that had reached him of my other patient.

I was able to visit this man only once again, namely, on the morning of the 20th, he was then evidently *in articulo mortis*, running profusely from the nose and right eye, covered with pustules; and, from all I could learn, the two cases seemed to progress *pari pasu*; the diarrhoea was persistent; coma came on during the night of the 18th, and he expired a few hours after I saw him. No *post mortem* was allowed.

The similarity of these two cases in their symptoms, progress, and event, must strike the most superficial observer. Both were infected by the same animal, at the same time, and under circumstances of the same kind; in both the virus lay dormant for only a few hours; they were attacked by the first symptoms of their dis-

ease within a short period of each other; the eruption appeared in both on the *fifth* day from inoculation; and even in the date of their death there was little difference.

I will not trouble the readers of this Journal with any remarks on the "differential diagnosis" of a disease which has not unfrequently been mistaken for acute rheumatism, fever, &c. &c.; but, in concluding, I may be permitted once more to point to the "*circumferential elevated white zone*," *external* to the redness, surrounding the pustule; when this appears, I think the practitioner need have little hesitation in declaring that his patient is suffering from one of the most fatal maladies with which we are acquainted.

Cases of Injury of the Head. By J. PUREFOY, M. D., Cloughjordan.

Severe Case of Concussion of the Brain.—J. R., aged 26, was severely beaten with a spade-handle about seven hours before I visited him, on the 17th of August, 1847. Complete insensibility, with loss of speech and vomiting, followed immediately upon the injury being inflicted.

At visit he was found pale and cold; pupils contracted but moveable: pulse 60, small, compressible, and regular; respiration slow and oppressed, but not stertorous. A cut was found extending across the vertex, about an inch and a half in length, and a soft, diffused tumour, of the size of a crown piece, immediately above the left ear: but no fracture could be discovered. On the 20th inst. convulsive movements of the muscles of the face were observed, recurring two or three times in the course of an hour. Whilst these convulsive movements continued the pupils slowly dilated to a considerable degree, and as they subsided the pupils gradually returned to their previous contracted state, leaving the patient in profound stupor. From the occurrence of the convulsions the stupor had much increased; the patient passed into complete coma, discharged the stools and urine involuntarily, although, up to this period, he was able to stagger out of bed when he felt a desire to empty the bowels or bladder, being unable, however, to call any person to his assistance. On the 23rd inst. the tumour of the scalp was opened by a triangular incision, and a few clots removed from beneath the detached scalp; but neither fracture nor depression could be discovered, nor any appearance whatever of disease of the bone or of its covering. The convulsive attacks continued, with complete coma; pulse 60, full, and of good strength, whilst in the recumbent posture, but increased to 84 when the patient was raised up to the sitting posture. The treatment consisted in free and repeated bleeding from the arm, leeches and cold applications to the head, together with purgatives and alterative doses of calomel, with tartar emetic. On the 29th inst., just twelve days after the receipt of this dreadful injury, the patient made an effort to answer questions when loudly spoken to; his pulse had gradually got up to 84 in the minute, although the pupils continued widely dilated for some days longer.

From this date convalescence, although very slow, was progressive; the patient made an excellent recovery, and I am not aware that he continued to feel any injurious effect whatever in consequence of the injury.

Fracture with Depression; injurious Effects following at a remote Period after the Occurrence of the Injury.—P. C., a healthy labourer, aged 35, was accidentally struck upon the head, with much force, by a hurl, wielded by an athletic young man, whilst hurling, early in the month of March, 1847. He was knocked down and rendered quite insensible by the blow, and suffered from vomiting for two or three days after the accident had occurred, accompanied by coma, slow, labouring pulse, and paralysis of the *right arm*, the blow having been struck just above the left ear. The most active antiphlogistic treatment was employed for ten or fourteen days, together with the use of mercury to affect the gums; and at the end of a month the patient was apparently restored to perfect health. The only unpleasant symptoms remaining were, a slight sense of numbness in the right fingers, extending along the arm, together with an unusual irritability of temper. He followed his usual avocations and enjoyed excellent health until the following October, when one morning, unfortunately, he was thrown into a state of the most violent mental excitement, after having endured much bodily fatigue. The immediate effects were that he fell down in a fit of epileptic convulsions, when he was promptly bled and purged, with temporary relief, but from this date he became an irritable and unhappy epileptic. The premonitory symptoms were remarkable; the eyes became bright, animated, fixed, and slightly suffused; a distinct tingling sensation, proceeding from the fingers upwards, along the right arm, and into the right cheek, which becomes slightly convulsed, the angle of the mouth being drawn towards the right ear, then follows immediately the epileptic fit. On examining the head there appeared a depressed fracture of the skull, of an oval form, fully an inch and a half in length, and an inch and a quarter in breadth. The existence of this depressed fracture was ascertained during his first illness, but as the integuments were whole and sound, and that, at the same time, the bad symptoms yielded to the treatment employed, it was considered inexpedient, in consultation, to attempt to raise the depressed bone by means of an operation.

In the first case, that of concussion of the brain recorded above we have a remarkable combination of symptoms indicating primarily concussion, and at a later period, compression of the brain. The early symptoms,—insensibility, coldness of the extremities, oppressed and feeble pulse, with vomiting,—indicated the occurrence of concussion; whilst, subsequently, convulsions coming on, with a dilated and immoveable condition of the pupils, and profound coma, would seem to point out pretty clearly that there existed a depressed fracture of the skull, or that extravasation of blood had taken place,—in either case causing undue pressure of the brain at some point.

Reasoning thus, it was deemed right to cut down upon the injury, in order to ascertain the existence of depressed fracture; but as there did not exist any depression of the bone, it was determined not to proceed further with the operation. The cause of the convulsions and coma, in this case, can merely be conjectured; perhaps a slight extravasation of blood had taken place into the substance of the brain, and subsequently became absorbed under the influence of mercury, and the active treatment pursued.

The next case of injury of the head affords an instructive example of the very remote period from the receipt of the injury at which severe and distressing symptoms may follow; further, it proves the propriety of raising depressed fracture of the skull occurring in the adult subject, when the operation is practicable, in order to avoid the unhappy consequences which followed in the present instance. As the scalp *was not wounded*, and that the symptoms yielded to milder measures, it was considered prudent to avoid the risk of a severe operation; yet the result proved that the raising of the depressed fracture might have altogether averted the bad effects which followed upon this injury. Considered in a physiological and moral point of view, the case is interesting, as exhibiting the influence of mental emotions upon the heart and general circulation; and, again, the injurious effects of an over-excited circulation upon a brain already predisposed to diseased action.

Letter on the Contagiousness of Cholera. By R. J. GRAVES, M. D.

Merrion-square, October 16, 1848.

DEAR SIR,—In consequence of the appearance of cholera in England since my communication in the present Number of your Journal was printed, I beg leave to make the following additional observations on the progress of that disease:

As soon as cholera was established in Hamburgh, it appeared evident to us who advocate its contagious nature, that it was likely to be brought in trading vessels to the ports in England which have the most intercourse with that city; and what has been the fact? In those very ports, viz., Sunderland, Hull, and London, the arrival of cholera has been officially announced!—while not a single case has occurred in any of the numerous villages and small fishing towns on the coast of England between Sunderland and Hull, or between Hull and London. And why have all these towns and villages, which, on the hypothesis of the diffusion of cholera by the spread of some peculiar atmospheric influence, must have suffered quite as early from this influence as any of the three cities actually affected,—why, I ask, have they escaped? The answer is obvious,—*because they have no direct communication with Hamburgh.*

A melancholy instance of the evil and fatal effects which inevitably follow from an obstinate adherence to the doctrine of the non-contagiousness of cholera, is at this very time exhibited in a convict ship moored in the Thames. A prisoner is attacked with cholera; what means are taken to prevent its affecting his associates? Why

they are furnished each with a certain daily allowance of tobacco, and it is soon after announced in all the papers that the smoking has proved quite a luxury to them, has had the best effects on their spirits, and has effectually neutralized the fluviatile malaria. The triumph has been but short-lived, and King James himself could not have sent forth a more effectual counterblast against tobacco than that which issues from the spirit of the following paragraph :

“ *Woolwich, October 13, 1848.*

“ The cases on board the convict ship *Justitia*, up to this day, are twenty-five, six new cases having been reported during the previous twenty-four hours; of that number five have died, and one has been discharged; the other eighteen are not apparently in any immediate danger, but are so debilitated that their medical attendants have not considered themselves justified in entering them on the list of recoveries.”—*Standard*, October 14th.

Of course the Government Commissioners will consider this spreading of the disease in a crowded hulk as a decisive proof of its non-contagiousness!! as they have already done with regard to a ship which arrived at Hull. From their report on the latter case, it appears that sailor after sailor died of Asiatic cholera during the voyage from *Hamburgh*, *because*, forsooth, they indulged in eating plums and drinking cider. Such indulgences were not likely among the convicts on board the hulk, who used nothing unwholesome until they were set smoking by authority !

It is some satisfaction to find that OXENSTIERN'S *parvula sapientia* presides over the sanitary affairs of Great Britain; for as soon as it was ascertained that the cholera had safely arrived in London, *viâ Hamburgh*, the authorities immediately interfered, and quarantine was established between the two cities !

In conclusion I beg leave to repeat, that the unanimity of all Government officials called on to report on the non-contagiousness of cholera, is a striking proof that nothing is impossible to English *Capital*.

I remain, dear Sir, faithfully your's,
ROBERT J. GRAVES.

To the Editor of the Dublin Quarterly Journal.

Cases of acute dry Gangrene of the Fingers. By MAURICE HENRY COLLES, L. R. C. S. I.

It is the duty of every medical man to put on record curious or anomalous facts. This must serve as my apology for intruding on the profession the notes of three remarkable cases which fell under my notice in the hospital of St. Louis, at Paris, under the care of M. Jobert. They occurred at a period when north-east winds had prevailed for some days; and at such times, in consequence of the close proximity to Montfaucon (the common cess-pool of Paris), hos-

pital gangrene and erysipelas are very prevalent; and, in fact, during the fortnight, there were several cases of both in St. Louis, and afterwards at the Hotel Dieu; and about the same time a good deal of puerperal fever at the Maternité. The simultaneous appearance of all these unhealthy forms of inflammation—"Talis Hyperboreis aquilo cum densus ab oris incubuit"—has often been there remarked on; and when the wind does not continue long from that quarter, by closing the windows on that side of St. Louis, they generally escape the infection. Whether the miasmatic poison had anything to do with the production of the unusual form of inflammation which I am about to describe, every one must decide for himself: it certainly was the general opinion of those on the spot that it had, though the exact *modus operandi* none could better explain than by the vague term of constitutional effect; and yet constitutional disturbance occurred only in one of the individuals, and, in his case, evidently from a metallic poison.

CASE I.—A man aged about 30, healthy, and strongly made, a servant to an artist, his occupation being to clean his master's studio, palette, brushes, easel, &c., one morning pricked the ball of his right thumb with a nail, but not more than skin deep. Shortly after he was sent to clean a very dirty palette, and had to use his thumb a good deal to rub off the paints, some of which, of course, contained lead, others arsenic, mercury, &c. Towards evening he began to feel feverish and hot, his fauces dry and stiff, with a sensation of tingling heat, amounting at last to pain, in the epigastrium; irregular rigors and extreme thirst, but no pain in the thumb. Next day a small white pustule, or opaque vesicle, made its appearance on the scratch or puncture; the thumb became hot, painful, and throbbing; round the vesicle was an areola of an intense livid red. On the third day the apex of the little vesicle was hard and dry, and of a brownish colour, and the inflamed base was more extended. The gangrene continued to creep on for ten days, until the first and half the second phalanx were converted into a dry, hard, brown, shrivelled, horny substance, like burned skin, separated from the living parts by the same circle of livid red; the gangrened parts were destitute of sensation, while all beyond the line was intensely painful. The constitutional symptoms continued only until the third day, or until the local mischief was fully developed. The caustic potash and lime paste (*pâte de Vienne*) was applied all round the areola, and the disease ceasing to spread, amputation was resorted to at the second joint. The gangrenous inflammation did not return, but nearly two months elapsed before complete cicatrization took place: this was owing, in part, to diminished vitality; in part to unavoidable scantiness of the flap.

CASE II.—An hospital porter, sallow and thin, aged 45, while bundling up foul linen of the hospital, pricked one of his forefingers with a pin; it felt a little sore at the time, but scarcely more than an ordinary scratch would have done. This case progressed locally exactly as the preceding; there were no constitutional symptoms

worth mentioning at any period, and the treatment only differed in that the parts were amputated in the middle of the second phalanx while gangrene was still spreading; no previous application of caustic being made. The stump was six weeks in healing, granulations springing up constantly from the cicatrix. There was abundance of covering in this case.

CASE III.—An hospital nurse, about fifty years of age, thin and sallow, but healthy. The cause, progress, and treatment of this case were exactly the same as in No. 2, except that the part was amputated at the junction of the distal and second phalanges, and in ten days after the injury instead of a fortnight. The seat of gangrene was the right thumb. This was longer healing than either of the others, the flaps being scanty, the vitality impaired, and the subsequent granulations very troublesome, though small.

In comparing these cases in order to get at the causes, some circumstances are to be noted : their occurrence during an epidemic which altered for the worse all local inflammations ; the difference they exhibited from the ordinary forms both of this hospital gangrene and of poisoned wounds in general ; the difficulty experienced in healing the stumps ; and the absence of all fever in two, and the presence of severe constitutional disturbance in the other, ceasing on the appearance of the local gangrene.

Letter on the Subject of intermittent Fever. From CHARLES HALPIN, M. D., Cavan, to Dr. GRAVES.

Cavan, September 26, 1848.

MY DEAR SIR,—Knowing that the subject of intermittent fever has engaged a good deal of your attention, and feeling that the communication of any facts bearing on this disease will be acceptable to you, I forward you a very brief history of several cases of ague that came under my notice within the last six months.

I should premise that, so far as my experience of this county extends, ague is a very rare disease indeed. During the last eighteen years in which I have had the charge of a dispensary, I have not met with more than one or two cases of it in which the patient had not contracted it in some locality where it was endemic.

The cases I now submit to you are merely intended to show for how long a period the disease may lie dormant in the constitution, after the individual has been exposed to its exciting cause.

In the latter end of July, 1847, the fourteen men whose cases are included in this report, went from the neighbourhood of Shadone, county Cavan, to Lincolnshire, to reap the harvest ; thirteen of them remained until the latter end of September, a period of about six weeks, exposed to the malaria of the fens. The weather was exceedingly hot, and no rain fell in that part of the country for some months. During their sojourn there they drank immense quantities of water, which they all describe as of a most unwholesome character. Notwithstanding, they all returned home in good health, and continued

so up to the first week in April, 1848. The latter end of the month of March was intensely cold, and a biting easterly wind, veering occasionally to the north-east, set in, and prevailed until the first week in May. The accompanying table exhibits its effects on the harvest-men. Seven of the party were seized, most suddenly, with ague in the first week in April; the eighth man had his first rigor on the 28th of May; and the fourteenth on the list, who remained but a fortnight exposed to the malaria, continued exempt until the 13th of August, when a violent quotidian seized him. It will be seen that just twelve months elapsed between his entrance into the fens and his consequent illness.

No.	Age.	Arrived at Lincolnshire.	Left the Fens.	Date of Attack of Intermittent.	Type of Fever.	Season in the Fens.
1	46	Aug. 3, 1847.	Sep. 20, 1847.	April 1, 1848.	Quotidian.	Second.
2	20	"	"	"	Tertian.	First.
3	25	"	"	April 3, 1848.	"	Second.
4	27	"	"	April 2, 1848.	"	First.
5	30	"	"	April 1, 1848.	"	"
6	25	"	"	April 4, 1848.	"	"
7	45	"	"	April 1, 1848.	Quotidian.	Fourth.
8	34	"	"	May 28.	Tertian.	First.
9	41	"	"	{ October 15, 1847(a).	
10	40	"	"	May, 1848.	Tertian.	
11	24	"	"	First.
12	26	"	"	"
13	40	"	"	Third.
14	23	"	Aug. 17, 1847.	Aug. 13, 1848.	Quotidian.	First(b).

Of the fourteen men but three have remained exempt from the disease at this date, namely, Nos. 11, 12, and 13. No. 9 had fever a fortnight after his return home, for which he was treated in the county of Cavan fever hospital; during its course he suffered severely from rigors; and No. 10, who went to Liverpool shortly after his return from Lincolnshire, wrote to his friends in Lisnaglea, in the month of May, to say that he had been very ill of ague, that he was then recovering, but still unable to resume his work at the docks.

I shall abstain from entering into the treatment adopted, further than to say that quinine formed the basis of it, and that I have found it to act most satisfactorily when combined with purgatives, as compound powder of jalap, or compound rhubarb pill, in such quantities as insured two or three discharges from the bowels daily. I first saw quinine exhibited in this way by my friend, Dr. Tabuteau, of Portarlinton, at Oldcastle, County Meath, in the year 1823 or

(a) This patient had fever, attended with severe rigors, for which he was treated in a fever hospital.

(b) Four of the above had been in the fens previously, yet they never suffered any consequent illness before this time.

1824, when great numbers of the *male* population of that district suffered from intermittent fever, whilst, strange to say, the *females* escaped it altogether.

“ I remain yours very faithfully,

“ CHARLES HALPIN,

“ *Physician to the County of Cavan
Fever Hospital.*

“ *To Robert J. Graves, Esq., M. D.*”

Case of Double Uterus, with Observations upon the Subject of Generation. By JOHN PURCELL, M. D., M. R. I. A.

[Read at a Meeting of the Dublin Medico-Philosophical Society, July 1, 1773(a).]

SINCE the last time I had the pleasure of meeting this Society, the body of a woman was brought to the anatomical theatre, who was supposed to have died in the last month of her pregnancy. Upon opening the abdomen, the uterus appeared of such a size and form as is generally observed at that period. It contained a full-grown fœtus, but was furnished with only one ovarium and one Fallopian tube, which were situated on the right side. On the left was placed a second uterus, unimpregnated, and of the usual size, to which the other ovarium and tube were annexed. But these two uteri were totally distinct and separated from each other, except at the lower extremity of their necks, where their union extended a quarter of an inch, and an acute angle was formed between them. There was nothing extraordinary in the external parts of generation, but from each side of the meatus urinarius a membrane ran downwards, and the two, having comprehended this orifice between them, were joined together a little below it, so as to form by their union a septum or mediastinum, which, taking the remainder of its origin from all that prominent ridge called the superior column, and descending perpendicularly, was inserted into the inferior column, so as to extend from the entrance of the vagina as far backward as its posterior extremity, and thus to divide it into two tubes of nearly equal dimensions. But each of them did not lead solely to the womb of its own side, for the right vagina became gradually wider as it ran backwards, and at last was so far dilated as to comprehend within its circumference the orifice of both uteri, while that on the left side, having taken an oblique direction, ended in a *cul de sac* or cæcum. Such a conformation might have rendered it totally useless; to pre-

(a) The accompanying most interesting case of Dr. Purcell's is extracted from the Memoirs of the Medico-Philosophical Society of Dublin, vol. iii. p. 59, of which we have already given some account, in the preface to the first Number of the present Series of this Journal. At a future period it is our intention to furnish our readers with a Memoir of this distinguished physician, who, with Drs. Plunket, Quin, and Harvey, enjoyed the most extensive practice in this city towards the close of the last century. When this paper was written, Dr. Purcell was assistant to Dr. Cleghorn, the professor of anatomy to the University.—ED.

vent which, Nature, fertile in expedients, contrived a fissure in the septum, an inch in length, and about an inch distant from the womb of that side. Thus it appears that both uteri might be impregnated through either vagina, as that on the right side led directly to both, and as, by means of the fissure in the septum, the semen could be easily thrown from the left vagina into the right, where the apertures of the two wombs were placed. Through the latter passage both uteri would seem to have an equal chance for impregnation, for, notwithstanding that which contained the foetus was placed almost directly in a line with the axis of the right vagina, yet this, probably, was not its original position, but in process of time its bulk increased so much as necessarily to occupy the middle space, and push the unimpregnated one aside. But, however surprising it may seem at first view, yet there is reason to imagine that the right womb, though at a greater distance, would be much more apt to conceive than the other, and the left vagina only had been made use of; for when this was distended it appeared that the posterior part of the septum, by its protuberance, closed up and covered the left os tinæ, and as this would probably be the case in copulation, the semen, not finding a ready admission into it, would pass over to the right orifice, where its entrance could not be so much obstructed. So that, if we may hazard a conjecture, I think it more likely, since the right uterus only conceived, that the left vagina had been generally employed. And here I must beg leave to remark that this is a most extraordinary, and, I may venture to say, an unparalleled(*a*) instance, where a short penis would prove more effectual than a long one; for the left vagina ending in a *cul de sac*, and the fissure in the septum being at a considerable distance from its extremity, a long penis would overshoot the mark and lodge the semen in that part of it which was impervious, whilst one of moderate size, reaching only as far as the fissure, would give the seed a much better chance of being admitted. It was a prevailing opinion amongst the ancients that male children were conceived in the right side of the womb, and female in the left. Having so few opportunities of dissecting human subjects, they depended too much on the analogy of the structure of brutes, which has been the principal source of the many erroneous descriptions we meet with in their works. It is well known that the uterus of most quadrupeds is divided into two cornua, in which the foetuses are lodged, and it was not very absurd to conclude that nature might have formed them for the distinct repositories of the two sexes. Accordingly this was supposed to take place also in the human uterus, which has been described and delineated as if distinguished into two chambers. Hence arose the opinion, which is received in some places to this day, that a very sure prognostic with regard to the sex of the child may be drawn from

(*a*) In a side note on this page we here find the following observations: "How happens it then that a woman has conceived whose hymen remained entire?—*Vide* Maur. Ob. 489 and 583."

the side of the belly on which the tumour is more sensibly felt. Dissections, being now more frequent, have proved that the human womb consists of one undivided cavity, so that the fœtus, let it come from which tube it may, will, when arrived to a certain size, occupy it entirely. This observation, however, is not sufficient to refute the supposition that each sex might have its distinct ovarium; and Morah, a modern author, quoted by Haller, pretends to determine how many males and females any animal has brought forth, by examining the cicatrices or marks on its ovaria. For, in a creature which never had produced any other but females, he found the right ovaria still full of ova, but the left quite exhausted. That this is not always the case in brutes appears from the observation of Dr. Harvey, who found male fœtuses in the left cornu, and females in the right. In the human subject opportunities of determining this matter must occur very seldom, nor do I know of any instance recorded, except one by Cyprian, where both a boy and a girl were conceived, although the right tube was wanting. But the present case affords a second example, for here the impregnated uterus had not the smallest communication with the left ovarium or tube, and yet it contained a female fœtus. The septum was not merely membranous but fleshy, and of a considerable thickness, and, like most other mediastina in the human body, consisted of two laminae combined; of these each vagina furnished one, for each had a constrictor of its own, and, being completely surrounded by muscular fibres, had a power of contraction independent of the other, which must be very useful, and could not be effected so well if both vaginae were comprehended within the same muscular rings, and separated by a membrane incapable of action.

It has been the opinion of many modern authors of the first reputation, that the fundus is that part of the womb whose extent increases in the greatest proportion during pregnancy, and upon this supposition they have founded various theories. One of the principal arguments which they propose in support of their opinion is, that the insertion of the Fallopian tube is removed from the angles of the uterus, and gradually descends towards its neck, so that a short time before delivery they are at a very great distance from their former position. Haller does not pretend to deny these facts, but mentions three instances where the tubes did not change their place. But Petit, in his memoir on the cause and mechanism of childbirth, is clearly of opinion that the whole doctrine is destitute of foundation. He asserts that the fundus increases less than any other part, and that the surprising growth of the womb is effected by a fresh supply of fibres successively furnished by the neck and parts adjoining. As a decisive proof he insists that the insertion of the tubes continues nearly in the same place, and accounts for the error of the above-mentioned authors by observing, that as the fundus is pushed upward by the growth of the other parts, a greater portion of the tube will adhere to the surface of the tube, and then the apparent place of insertion be very far distant from the real one. This remark is verified in the pre-

sent instance, for the tube at first sight appears to penetrate into the middle of the uterus, but upon a closer inspection, and by introducing a bristle, it is found to run for a considerable space between it and the coat which it receives from the peritonæum, and at length to enter into its cavity not very far from the spot it may be supposed to have occupied before impregnation.

With regard to superfœtation, it is evident how easily it might have been in the present subject: and the supposition of a double uterus can easily account for it on many other occasions; but this is matter on which it would be needless to dwell longer, as it has been very fully treated in Gravel's dissertation, published in Haller's collection, where we meet with a similar instance of two uteri and a vagina, the anterior part of which was divided by a septum, but whose posterior portion was single where the septum was discontinued. Haller, in his *Opuscula Pathologica*, gives the history of a young lady of quality, who had two wombs, each of an oval shape, and furnished with its own peculiar vagina. One of these vaginæ was anterior, and communicated with the right womb, the other was posterior, and led to the left; and it is worth observing, that in these two cases, and in most others of the same kind which have been hitherto observed, each uterus had only one ovarium and one tube. A double uterus is described by D'Acrel, in a treatise printed at Stockholm, in 1762; and in the seventh volume of Haller's *Elementa Physiologiæ* various authors are referred to who deserve to be consulted on this subject. In some of these we find examples of two wombs, or one womb divided into two cornua, viz.: Mad. la Marche's Instructions to Midwives; Boehmer's *Fasciculus Secundus*; the History of the Academy of Science for the years 1705, 1747, and 1752; T. Bauchine; Sylvius; and Julius Obsequens, as quoted by Riôlan, though the observation is supposed by many to refer only to the external parts of generation; the *Commercium Litterarium Noricum*, anni 1733; Levret and Valisnerius, which last describes a case where one of the wombs opened into the rectum. Sometimes the uterus retains its proper external appearance, although it be really double, its cavity being divided by a septum. Of this instances occur in the History of the Academy of Science for the years 1705, 1708, and 1752; in the *Ephem. Nat. Curios.* Dec. 2, ann. 5; in the *Acta Moguntina*, T. ii.; in Levert, p. 32; in Heuerman; and in Eisenman, of which last a plate is given by Gravel, in his Treatise on Superfœtation.

Since, therefore, it appears that in the structure of the parts of generation nature frequently deviates from the ordinary course, practitioners in midwifery ought to consider how many difficulties they may perhaps be exposed to by not attending to the possibility of sometimes meeting with a womb formed like that I have attempted to describe. An attention of this kind would probably have been of the utmost consequence in the present case, for the orifice of the unimpregnated uterus was so far dilated as easily to admit two or three fingers, which must have arisen from the efforts of the midwife to bring on delivery; and the septum was likewise lacerated in two places, I presume by the like unavailing attempts.

Thus, Gentlemen, I have endeavoured to give a faint illustration of the annexed drawings, whose merit sufficiently declares them to be the performance of our worthy and ingenious member, Doctor Macbride, to whom I with pleasure acknowledge myself indebted upon this and many other occasions(*a*).

On the Use of Ergot of Rye in Mydriasis. By J. F. M'EVERS, M. D.,
Cork.

Cork, October 17, 1848.

IN the London Medical Gazette of September 8, a correspondent notices the peculiar action of ergot of rye upon the iris, discovered by Mons. Comperat; he says that in excessive dilatation from the use of belladonna, powdered ergot of rye, taken like snuff, has the property of contracting the pupil. I tried its effects on several persons, whose irides were strongly under the influence of belladonna, and in no case did the ergot cause any change when employed on the same day with the belladonna, but in every case, on the subsequent morning, whilst the pupils were still largely dilated, the ergot had a marked effect in the course of a few minutes. Thinking, with M. Comperat, that our knowledge of this property of the ergot may be taken advantage of when the pupil is preternaturally dilated from other causes, I was happily enabled to test its efficacy in the following case of mydriasis.

Barnaby Kelly, aged 50, a pensioner, of tall and slender make, had spent the greater part of his life in tropical climates, but returned home with a good constitution. On getting out of bed three weeks ago, he observed excessive lachrymation of the right eye, which has continued since, together with impaired vision. The eye is free from vascularity or pain of any kind, looks healthy in all its parts, except the iris, which presents the appearance of a narrow ring, so largely is the pupil dilated; the iris is perfectly immoveable.

A few pinches of ergot contracted the pupil considerably in a few minutes, whilst a few additional pinches, taken on the following morning, reduced the pupil to its normal standard, the iris assuming the lively motions of healthy action; thus, in a day, completing, as far as the pupil is concerned, the cure of a disease which Demours, and other writers on ophthalmic surgery, tell us cannot be accomplished by a six months' treatment.

This action of ergot of rye on the iris is worth the careful consideration of physiologists, and, I have no doubt, will lead to important results.

(*a*) The drawings are not to be found among the Memoirs from which this case is quoted.

MEMOIR OF THE LATE WILLIAM GRIFFIN, M. D., OF
LIMERICK(*a*).

THE icy hand of death has of late been pressing so heavily on the members of our profession,—its approaches have been so rapid and follow in such quick succession,—so many firesides have been chilled and deserted by its awful visitations,—and such an amount of misery has followed in its train,—as to sicken the heart and render it truly sorrowful. When we recount the noble spirits and the master minds which departed from amongst us, sinking beneath a pestilential scourge, and call to memory a cherished friend, or some fond companion of our early days, our spirits droop within us, and we become filled with gloomy forebodings. The serious injury which the profession has sustained in the loss of so many useful and valuable members, and the dismal tales of woe, which of late days have accumulated upon our attention, had in a measure blunted our acuter feelings, disposing us to give way to a species of fatalism, and to almost persuade ourselves, were we not able to account for it by other causes, that as a body we are doomed to destruction.

But when the announcement of Dr. William Griffin's death fell upon our ears, however apathetic or resigned we might have been disposed to feel,—whatever amount of philosophy we might have summoned to our aid,—we could not avoid being acutely sensible to so heavy a shock.

The name of Griffin carries so many bright associations with it, awakens in the mind so much purity of thought and lofty sentiment, as to claim and call forth our warmest acknowledgment. Who that is familiar with the national works of Gerald Griffin, that has not been carried away in profound admiration of his exquisite genius. The author of the *Collegians* may be imitated but never can be out-rivalled in originality of thought, beauty of conception, powers of description, and faithful imagery. His chaste and eloquent delineations of life and character, so true to nature, and so replete with moral impulse, charming while they instruct, and instructing while they charm,—deservedly gained for him the unqualified approval of the literary world, and raised up a monument to his fame and his memory both lasting and imperishable.

To the family of Griffin has been conceded the reputation of being highly talented, and that talent, as nature would have ordained it, appeared traceable to the mother's side. William, the subject of this memoir, was the second of five brothers. He was born in the city of Limerick, on the 25th of October, 1794; his father held the position of a respectable country gentleman, one of that class who constitute the worth and respectability of the country

(*a*) We are indebted to a medical friend in Dublin, the early companion and fellow-student of the late Dr. Griffin, for this memoir.

in the absence of the lord of the soil, who, unfortunately, in too many instances, is never heard of, save through his agent, when the rent-day arrives, or the term of the lease is on the eve of expiring. Some of his forefathers, however, had held in fee large territorial possessions, of which they had been deprived by the operation of laws, the policy, or injustice of which it is not our province to touch upon. His mother was sister to the late Dr. Geary of Limerick, a man of considerable eminence in his profession, and more particularly distinguished for his skill and great success in the treatment of fever.

He acquired a good classical education, first at the school of Mr. T. O'Brien, and afterwards at that of Mr. Richard M'Eligott, a man of much learning, and a teacher of distinction. While at school he was remarkable for capacity and quickness of comprehension. He was also very industrious, and made rapid progress in his studies. Before his education was well completed he was sent to sea as a midshipman, a mode of life at that period somewhat palatable to his taste. His prepossessing appearance, gaiety, and gentlemanly, unassuming manner, rendered him a favourite with all. Through the influence of Sir Vere Hunt, Bart., in the beginning of July, 1809, he entered as a midshipman on board the *Venerable*, seventy-four, the Flag Ship of the expedition to Flushing in that year, and then under the command of Sir Home Popham and Captain King. She carried out Lord Chatham and his staff, and was soon brought into action in an attack on the batteries, which William describes in a letter home, as a "very new and startling affair," but which was successful in its object without much bloodshed. The *Venerable* having returned to England was soon despatched for Walcheren again, and on her passage there was wrecked at midnight on the Drogan Sand, off Flushing; her masts had to be cut away, and her cannon and stores were thrown overboard. She was barely kept afloat by constant pumping until morning, when she was towed into dock by her cutters.

Being repaired at Flushing she was towed to England by the *Blake*, seventy-four, and young Griffin arrived in Chatham, quite tired of the sea, and sick of a seafaring life. At this early period we have to notice the beamings of those high mental qualities which were in after-life developed, in the composition of a poem, giving a full and glowing description of the shipwreck, the perils they had to encounter, and their eventual deliverance.

Having, after some consideration, determined to discontinue a seafaring life, he obtained leave of absence the following year, and shortly after had his name taken off the books of the Admiralty.

He now fixed his choice on the medical profession, but difficulties then stood in the way of his being able to fully accomplish his views, in consequence of unsuccessful speculations in which his father had been involved. Being thrown in a measure on his own resources, his natural energy and engaging address so far favoured him as to succeed in getting himself apprenticed to Mr. Wigram, a respectable general practitioner in Holborn. In this year (1810) he became

familiar with the composition of medicine, and attended the surgical practice of St. Bartholomew's Hospital under Earle, Harvey, and Abernethy. His zeal and energy soon attracted the notice of this last celebrated surgeon, who, by way of appreciation, gave him, under his hand, an unlimited admission to attend his lectures. His attendance on these lectures, and on St. Bartholomew's Hospital, continued until 1814, when he formed a connexion with a surgeon of East Grimstead as his visiting assistant, with whom he remained for a period of two years.

In 1816 he visited Brussels for the purpose of recruiting his health, which suffered from too close application to study; and in the latter part of that year, in consequence of continued delicacy, he was obliged to defer the completion of his education, and return to his friends in Ireland, after an absence of eight years. It will be remembered that this was the year in which typhus fever commenced to make such terrible ravages, among the poor especially, in the south of Ireland. The neighbourhood in which he resided soon afforded a wide field for observation, which he eagerly took advantage of, and published his views in the form of a pamphlet, which, at the time, excited some share of attention; and in reference to which he writes in an old pocket-book: "Published a little pamphlet on the epidemic fever then ravaging Ireland. Began to get a little practice without much seeking for it." His name, however, as "a skilful doctor," was spread about, and he established for himself such a reputation, that he was appointed medical attendant to the Currah Dispensary.

In the following year he fixed his residence at Adare, within eight miles of Limerick, and was appointed medical attendant to the Clarina Dispensary. In the latter part of the year 1822 he removed to Rathkeale, opened a small hospital at his own expense for the sick poor, and acquired a tolerable share of practice for the short time he remained there. These various engagements, which the nature of his circumstances made it impossible for him to decline, prevented him from fulfilling his long-cherished desire of completing his medical studies, and obtaining his diploma. His position in this respect subjected him to occasional slights, which were the more annoying to his sensitive mind, as coming from persons far his inferiors, both in education and abilities. There was no remedy, however, but to submit to them until his aim was finally accomplished. In the year 1823, on the death of his friend and relative, Dr. Enright, he was appointed physician to the Pallaskenry Dispensary, in consequence of which he resigned that of Clarina, but was permitted to retain that of Currah as it was in his immediate neighbourhood.

It was here in Pallaskenry that he made an extensive collection of facts and laid the foundation of those views, which he afterwards gave to the medical world in his celebrated work on Spinal Irritation. He now enjoyed an extent of practice equal to what our best country districts afforded, and hoped, as each new year arose, to be able to absent himself from his duties, in order to graduate in one of the

colleges. An event, however, supervened, which threw this anxious and earnest object of his mind's attention quite out of consideration for the present, and even seemed to have put it beyond his reach for ever. During the last few months of 1823 he began to suffer from a painful affection of his knee and hip, which exhibited in its course and progress all the features of hip disease. He became alarmed, and came to Dublin for advice, where he consulted the late Mr. Colles, who felt a deep interest in his case, and, after several patient examinations gave a decided opinion as to the positive existence of that affection. He recommended him to return home and put in requisition the usual remedies, such as perfect rest, counter-irritation, &c., &c.

This sad announcement, coming as it did from an authority upon which he placed so much reliance, had a most depressing effect on his spirits. On his arrival home he appeared quite overcome with anxiety and cares. The mere idea of giving up his practice, at once and entirely, never, perhaps, to resume it again, was more than the strongest mind could bear up against. One circumstance, however, remained, which afforded some consolation, and prevented the blow, heavy as it was, from being altogether so disastrous to him. In the course of his past career he had been able to save out of his income as much as was necessary to complete the medical education of his brother, the present Dr. Daniel Griffin of Limerick, who now lived with him, having already passed through his studies. A short time before, the governors of the dispensary, with feelings of the kindest sympathy for his situation, and the most earnest anxiety to contribute towards his comfort, appointed Daniel as his *locum tenens*, an arrangement which prevented the institution with which he was connected, together with the practice which he enjoyed, from passing into the hands of strangers.

After a little while his spirits brightened up somewhat, and those traits of natural energy and liveliness of character, which afterwards became so evident, would seem to be manifesting themselves. Severe though the trial was, a state of inaction with him was a perfect impossibility. Having nothing wherewith to employ himself, he turned his attention to light literature. The success and rising fame of his brother Gerald had, in all probability, turned his thoughts in this direction. While on the bed of sickness, and in the height of his sufferings, he took up his pen and commenced writing plays; and it was curious to remark that, as in the case of Cowper, who wrote "John Gilpin" in the midst of the gloomiest apprehensions, most of the productions were of a comic nature. He tried to have one of them introduced on the London stage; it was pronounced by competent judges to be possessed of considerable merit, and far above mediocrity, but merely wanting in that subordinate quality which is understood by the term "stage effect." An idea of his powers in this respect may be conceived by reference to some pieces in prose, of his composition, which were published with collections of tales by his brother Gerald; one called "The Persecu-

tion of Jack Edy," in the volume entitled "Hollandtide;" and another under the name of "The Mistake," in the "Tales of a Jury-Room."

The nature of these pieces is not by any means such as would indicate that they had been composed on a sick bed, which, however, was really the fact; and, strange as it may appear, there was hardly a performance of his of any note through life that was not accomplished either in the midst of the most harassing duty or the severest suffering. Fortunately the illness under which he was labouring did not turn out so serious as was anticipated. After a confinement of some months the second hip became affected in the same manner as the first, and both upper extremities participated in the attack. It may be imagined that this event would cast a fresh damper over his spirits, but quite the contrary occurred. The thought immediately flashed across his mind, that the assemblage of symptoms now presenting were but a diffusion of the original attack, and at last clearly revealed its true character. All anxiety and apprehension in regard to organic affection of the hip vanished from his mind, and his views on the nature of his disease were now quite altered. He summoned up an amount of mental energy really astonishing, and lost not a moment in adopting that course of treatment which the features of his case, from its present complexion and the result of past experience, could safely and with success be capable of suggesting. As the first essential and most important step, he removed to the sea side. The effect of the change was no less sudden than surprising. His strength and spirits rapidly rallied, so that in the short space of little more than two months he seemed like one who, from a nerveless and exhausted condition of body, had virtually jumped into a state of perfect health. A state of delicacy which he had long complained of, and which had at times offered serious impediments to his various undertakings through life was, in all probability, of the same nature, and taking its rise from the same cause as the present, though in its combinations, and the several forms it assumed, the idea of an organic disease frequently took possession of his feelings. When he first returned from London in the year 1816 he was seized with pain in the left side, accompanied with cough and slight expectoration. It was feared that phthisis had actually set in, but the symptoms passed off in the course of the year. After this he suffered occasionally from pains in the left side of his head and neck, and upon one occasion got a severe attack of *tic dolooureux* in the eye-brow of the same side. He was accustomed to say he was exactly like two men put together, one of a sound and healthy constitution, and the other always ailing.

During the stages of his weary illness he never lost sight of his profession, feeling a deep and lively interest in its respectability and welfare. He had himself supplied with periodicals, and the best modern works, both on medicine and surgery; a new or important medical fact was as welcome to his ears, and seemed quite as rich a treat to him in his then situation, as in the best days of his untiring

exertions. In this way he was enabled to fan the lambent flame of research, and to keep pace with the improvements of the day. The idea of perfectly and safely escaping so trying an ordeal seemed to have inspired him with new hope, and convinced him of his great recuperative powers. In fact he felt as if suddenly and altogether endowed with new life and energy; and after taking a review of his position and the prospects before him, he came to the fixed resolution of attaining his qualification, irrespective of any obstacle that might seem to interfere with such an undertaking; and in fulfilment of this purpose he started for Edinburgh previous to the commencement of the winter session of 1825.

While there he associated himself with a few fellow-students, who, from mere acquaintances, became warm and united friends. A strong feeling of mutual attachment grew up between them, and they formed an independent group in themselves. They mixed together, studied together, and moved abroad as one body in their daily little walks during the interval of lectures, and those more expanded excursions which were occasionally undertaken by them. The leisure time thus appropriated is not to be conceived as representing hours of idle recreation. It was rather an intellectual pastime in which each gave his contribution or played some part. Griffin, the bright luminary and centre of attraction, as if too careful of himself, or perhaps being sensitive to the northern blast, generally mounted a thick drab outside coat, proof against wind and weather. It was furnished with a pair of immense pockets, all but ready to burst with voluminous notes of lectures, and other curiosities of literature. Upon one occasion, as he appeared slow in coming forth, he was rather abruptly interrogated how it came to pass that he, who had so much wisdom and knowledge within his head, could be able to carry such a weight of learned lumber about him. Without a single word in reply he unloaded himself of the *Dublin Weekly Register*, and read aloud one of Sheil's brilliant speeches. It was a question which he admired most,—the eloquence of the orator, or the glowing aspiration for freedom he so vehemently proclaimed; but a manly and open declaration soon set the matter at rest, by his professing his unqualified adoption of the maxim,

“*Pro rege sæpe, pro patria semper.*”

On the subject of phrenology he was interesting without being original. He believed that there was more than “something” in its doctrines; but found fault with the nomenclature and the bumpy subdivisions. He also believed that the objections against it, in regard to its tending towards materialism, were not of much importance, for (he observed) “granting that the intellectual faculties, or thinking principles, did solely depend on the special organization of the brain, still the impress of the hand divine must ever be acknowledged; and further, the mere endowing of matter with such wonderful attributes, would be a no less display of infinite wisdom. He was in the habit of exhibiting a peculiar taste for metaphysical disquisi-

tions, and spoke in admiration of Locke, though he considered the works of Reid and Dugald Stewart as improvements, particularly in reference to the conceptions of matter, which Locke represented in too unreal a form.

He had a passion for poetry, was an ardent admirer of Moore, and repeated the national melodies with soul-stirring emotion, at times indulging in a vein of sentimental effusion of rather a gloomy and languishing character. He also showed himself familiar with the writings of the most eminent of the British poets. But these allusions may be alien to our present purpose, so we shall advance in the usual footpaths.

In his attendance upon lectures he was regular and constant, though he conceived that in some degree they were a loss of time to him. He had always his note-book at hand, not in order to take down the words of the lecturer, but rather to select those leading facts and important truths which form the basis of skilful practice.

In hospital attendance he was most assiduous. Any case in the least interesting immediately caught his eye, and when it formed the subject of a clinical lecture he was fully informed of all its bearings. And if it should appear to him that any doubt or difficulty had not been sufficiently explained away, he did not fail to express his views or objections, whichever they were, to the lecturer. The late Professor Graham entertained a very high opinion of his capabilities, and paid in open class a very flattering compliment to his exquisite tact in diagnosis. The instance is worth recording. A woman was brought into the Royal Infirmary, with apparent symptoms of acute peritonitis, and was ordered by Dr. Graham to have leeches applied to the abdomen. Griffin pointed attention to the morbid sensibility of the skin, the inconsistent condition of the pulse, and the expression of caprice in the countenance, as suspicious of a simulating disease. Graham smilingly replied by assuring him that it was "all very fine in books, but when coming to practice matters will seem differently." A second bleeding was ordered, but before it was put in practice the patient was seized with a fit of hysteria, which at once revealed the true nature of the attack, and testified most triumphantly to the skill and abilities of the student.

The winter having passed and the lectures reaching their close, the day of trial became nigh at hand, that day whereon the twilight beamings of hope and fear doubtfully agitate the student's mind. Griffin was the first candidate to break the ice, and, as a matter of course, had no difficulty in surmounting the "*primum periculum*," for the medical degree. Almost contemporaneously he presented himself at the College of Surgeons, and obtained his diploma. All the heavy task being now essentially overcome, and an interval of three months having to elapse before the solemn ceremony of exhibiting in the cap of Hippocrates, brief as the period was, his native genius and enterprising spirit would allow of no rest, and, to the surprise of many, he is shortly after announced in the *Edinburgh Medical and Surgical Journal* as the author of an

“ Essay on the Nature of Pain,” a most ingenious production, ably written, and abounding with interesting anecdotes, the basis of which had formed the subject of his inaugural dissertation.

When on the eve of leaving Edinburgh he entertained the notion of fixing his residence in London, as opening a boundless range for his varied and active acquirements. It even at one time amounted to a fixed resolution, in which he was strengthened by the advice and generous counsels of Drs. Graham and Duncan, who could distinguish in him the materials for “ a physician in a great city.” He subsequently abandoned this project, and returned to his native soil, the sphere of his usefulness and good deeds, thrice welcome, with honours on his head, and a prospect before him bright and promising from former remembrances. Limerick was now his chief aim, as it had been his early resting-place. It would not be prudent to prematurely leave the village of Pallaskenry, but, as a preliminary, he fitted up a house in a central part of the city as an infirmary for diseases of the eye, and those incidental to women and children. The poor, whom he attended gratuitously, flocked to him in great numbers, and the institution was soon identified with his fame, and was the means of giving him a step in the ladder of promotion.

In 1830 he finally settled in Limerick, having in this year married the niece of Sir Vere Hunt, Bart., a very early acquaintance whom he had met in his boyhood days, while residing at Sir Vere’s house in London, previous to his going to sea. As the fruit of that marriage he has left one son, fifteen years of age, who has already given signs of much promise. From this period his rise was steady and progressive; his income, rapidly increasing after the first few years, soon reached that amount which entitled him to the rank of a head physician.

The lamented death of the distinguished novelist, in 1840, was a source of long and enduring sorrow to his over sensitive feelings. As an instance of the love and devoted attachment which reigned in this united family, we here annex, from the Life of Gerald, published by the present Dr. Daniel Griffin of Limerick, a portion of the Dedication, to the subject of the present memoir: “ whose affectionate care,” he says, “ fostered that talent in his youngest brother, from which the public has derived such solid pleasure,” and “ in memory of the deep and unchanging affection that brother always bore him.”

As a practitioner Dr. Griffin was unbounded in his resources, yet withal extremely cautious, and trusted much to the powers of nature. He was sanguine to a degree, never despairing while a shadow of hope remained. He felt an intense interest in his patients, and in his anxiety to have the necessary measures faithfully carried out, he became at once the nursetender and the physician. He was connected with several of the medical institutions of his native city, and contributed largely towards their improvement and efficiency; he delivered some very interesting lectures in the board-room of the county infirmary, which were well attended by amateurs and pupils;

he also endeavoured to establish a school of medicine and surgery, but failed in the attempt, for want of active co-operation on the part of others.

In medical politics he was a reformer; and in his evidence before the Committee of the House of Commons on the Medical Charities he offered many able and valuable suggestions for their better regulation. He was a member of the Corporation of Limerick, and had within reach the highest honours that body could confer. When the question of nationality was debated he was at his post, and manfully avowed his sentiments; but he never obtruded his opinions in private, neither was he dissuaded from avowing them, when necessary, from a feeling of sickly timidity. He felt for the wrongs of his country, and sighed for her regeneration.

He was a patron of the fine arts and general literature; and he stood deservedly high in the good opinion of his profession. In the relations of social life he was bland and amiable; and he had the singularly good fortune of attaching to himself a large circle of acquaintances; his private worth and genuine philanthropy were alike proverbial; he was the esteemed of many and the favourite of all; in unpretending charity he was profuse, and in self-denying virtue unequalled; as a friend he was sincere and upright; as a man of feeling he was kind and really generous; and as a Christian he was religious without ostentation. No man could review the past with a more sterling sense of conscious rectitude, and no man could look to the future with brighter hopes of eternal reward.

In him were centred those rare intellectual excellencies which constitute the all-important attributes of a "medical mind." To the faculty of comparing and generalizing facts in the spirit of true philosophy, he had superadded the habits of close and faithful observation. The several original contributions he has made to the medical literature of his country deservedly give him place among its eminent medical men.

His brilliant career was cut short in consequence of his enthusiastic devotion to the best interests of the profession. As the result of untiring mental energy, coupled with great and overpowering bodily labours, his nervous system became quite unhinged, and in the beginning of April last he began to be affected with pain in the left side of the head. As this was no uncommon thing with him, he treated it as rheumatism, with leeches, blisters, colchicum, turpentine, &c., all the while going about and attending to business. He usually got relief on the application of remedies, and then after a week or so fell back again. After four or five weeks he consented, under the persuasion of his friends, to give up business and go to the country. He now noticed a difficulty in recollecting particular words, which embarrassed his mind in speaking or writing to patients; and his letters, though otherwise correct and to the purpose, contained several erasures or, at times, the substitution of one word for another. He used to say: "It is a most curious thing: I know as well as possible what I am

going to say, but, if I were shot for it, I cannot think of the particular word." The worst sign about him was complete absence of any sense of danger. It was now obvious that he laboured under a chronic inflammation of the brain, which, notwithstanding every possible effort that could be devised, pursued the usual melancholy course; paralysis of the right side quickly supervened, complicated with a total interruption of conversational powers; a general debility and complete languor ensued; and he continued in the same distressing and hopeless state till the termination of his earthly sufferings, which took place on the 9th of July of the present year.

We regret that the length to which this memoir has extended prevents us from alluding in a particular manner to Dr. Griffin's able writings. The following is a list of his professional publications, and the papers published by him in the different medical periodicals:

1. A Treatise on Fever. 8vo. pamphlet. 1818.
2. An Essay on the Nature of Pain, with some Considerations on its principal Varieties as connected with Disease, and Remarks on the Treatment: being the Subject of an Inaugural Dissertation delivered at the University of Edinburgh. 8vo. pp. 86. Edinburgh, Moir. 1826.
3. Observations on Functional Affections of the Spinal Cord and Ganglionic System of Nerves, in which their Identity with Sympathetic, Nervous, and Imitative Diseases is Illustrated. By William Griffin, M.D., &c., and Daniel Griffin, M.D. London, Burgess and Hill. 1834. 8vo. pp. 247.
4. Observations on the Cholera, as it appeared in Limerick in 1831-2. 1834.
5. Medical and Physiological Problems, being chiefly Researches for correct Principles of Treatment in disputed Points of Medical Practice. By William Griffin, M.D., and Daniel Griffin, M.D. London, Sherwood and Co. 1843. 8vo. pp. 356.

Dr. Griffin wrote some papers in the Medical and Physical Journal, and was a constant contributor to the Dublin Medical Journal, both in its original and in its present form. The Medical and Physiological Problems, which he afterwards published in connexion with his brother, first appeared, together with other papers, in detached essays scattered over seven volumes of our former series; and the last of his labours (a paper on abortion) appeared in the Number for May, 1847. We understand he was preparing a work on cholera at the time of his death, which is now nearly ready for publication.

EPITAPH UPON BOYLE GODFREY, ALCHEMIST, &c.

IN the Number for May, 1846, we gave an eulogium extracted from the Minute Book of the Dublin Medico-Philosophical Society, upon Isaac Butler, the celebrated Dublin astrologer, caster of nativities, and almanac maker,—the pupil of Dr. John Whaley, and withal beadle to the Worshipful Company of the Apothecaries,—who died in 1755. In the same curious old manuscript work we find the following epitaph upon the celebrated alchymist, Boyle Godfrey. It was written by the learned and facetious Dr. Charles Smith, author of the Histories of the Counties of Cork and Waterford. It was read at a meeting of the Society upon the 1st of July, 1756, and is inserted in the Minutes of the 15th of that month(*a*).

EPITAPHIUM CHEMICUM.

Here lieth *to digest, macerate, and amalgamate* with clay,
 In *Balneo Arenæ*,
Stratum super stratum,
 The *Residuum*, *Terra Damnata*, and *Caput Mortuum*,
 Of BOYLE GODFREY, CHIMIST,
 And M. D.
 A man who in this earthly *Laboratory*
 Pursued various processes to obtain
Arcanum Vitæ,
 Or the Secret to Live :
 Also *Aurum Vitæ*,
 Or the Art of getting, rather than making, Gold.
Alchemist like,
 All his labour and *propition*,
 As Mercury in the fire, *evaporated in fumo*.
 When he *dissolved* to his first principles,
 He *departed* as poor
 As the last drops of an *alembic* :
 For riches are not poured
 On the *Adepts* of this world.
 Thus,
 Not *Solar* in his purse,
 Neither *Lunar* in his disposition,
 Nor *Jovial* in his *temperament* ;
 Being of *Saturnine* habit,
Venereal conflicts had left him,
 And *Martial* ones he disliked.
 With nothing *saline* in his *composition*
 All *Salts* but two were his *Nostrums*.
 The *Attic* he did not know
 And that of the Earth he thought not *Essential* ;
 But, perhaps, his had lost its *Savour*.

(*a*) Boyle Godfrey published “A New Method of Extinguishing Fires,” London, 1727, 8vo. ; and a sort of receipt-book entitled, “Miscellaneous Experiments and Observations on various Subjects,” London, 1737, 8vo. Of this latter there was a Dublin reprint.

Though fond of news, he carefully avoided
 The *fermentation, effervescence,*
 And *decupilation* of this life.
 Full seventy years his *exalted essence*
 Was *hermetically sealed* in its *terrene matrass* ;
 But the *radical moisture* being exhausted,
 The *Elixir Vitæ* spent,
 Inspissated and *exsiccated* to a cuticle,
 He could not *suspend* longer in his *vehicle*,
 But *precipitated gradatim*
 Per companam,
 To his original dust.
 May that light, brighter than *Bolognian Phosphorus*,
 Preserve him from the *Incineration* and *Concremation*
 Of the *Athanor, Empyreuma, and Reverberatory*
 Furnace of the other world,
 Depurate him, like *Tartarus Regeneratus*,
 From the *Fæces* and *Scoria* of this ;
 Highly *rectify* and *volatilize*
 His *Etherial Spirit*,
 Bring it over the *helm* of the *Retort of this Globe*,
 Place in a proper *Recipient*,
 Or *Crystalline Orb*,
 Among the elect of the *Flowers of Benjamin*,
 Never to be *saturated*
 Till the general *Resuscitation*,
 Deflagration, and Calcination of all things,
 When all the *reguline* parts
 Of his *comminuted substance*
 Shall be again *concentrated*,
 Revivified, alcholized,
 And imbibe its *pristine Archeses* ;
 Undergo a new *transmutation*,
 Eternal fixation,
 And *combination* of its former *aura* ;
 Be *coated* over and decorated in robes more fair
 Than the *magistie* of *Bismuth*,
 More sparkling than *Cinnabar*,
 Or *Aurum Mosaicum*.
 And being found *Proof Spirit*,
 Then to be exalted and *sublimed* together
 Into the *Concave Dome*
 Of the highest *Aludel* in Paradise.

SILVESTER O'HALLORAN.

IN our memoir of this distinguished surgeon we omitted to mention in the bibliography, the following tract:

“ A concise and impartial Account of the Advantages arising to the Public from the general Use of a new Method of Amputation.” Dublin, S. Powell. 1763. 8vo. pp. 15. It was dedicated to Ezekiel Nesbit and the College of Physicians, and to John Nichols and the College of Surgeons.

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